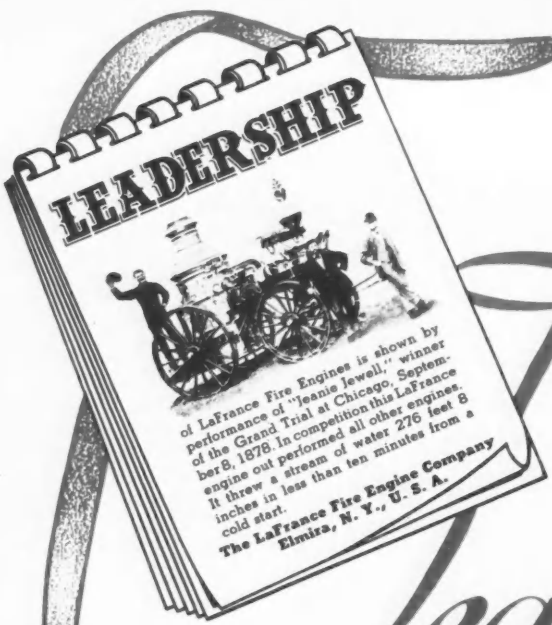
Volunteer Firemen

MARCH 1946

NATIONAL FIRE PROTECTION ASSOCIATION
INTERNATIONAL
60 Batterymarch Street Boston 10, Massachusetts

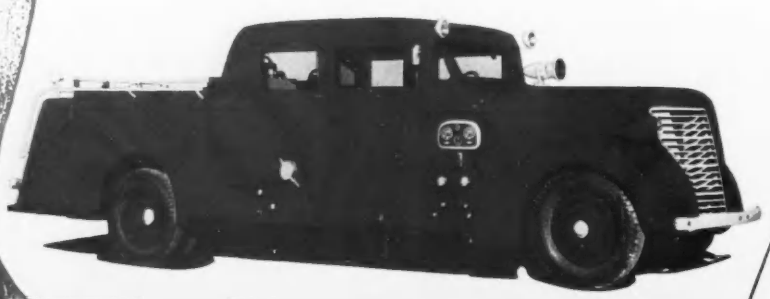

LEADERSHIP
of LaFrance Fire Engines is shown by performance of "Jeanie Jewell," winner of the Grand Trial at Chicago, September 8, 1876. In competition this LaFrance engine out performed all other engines. It threw a stream of water 276 feet 8 inches in less than ten minutes from a cold start.
The LaFrance Fire Engine Company
Elmira, N. Y., U. S. A.

Leadership

Then—as now—carries a greater responsibility than outstanding performance. American LaFrance leadership, as manufacturing specialists, has been maintained for over a century by constant application to the problems of the fire service. Design changes and new types are contributing to the efficiency of fire departments.

The best equipment is your safest protection. American-LaFrance offers you the World's Finest Fire Engines in a range of capacities from 500 g.p.m. to 1250 g.p.m.

- **Dependable**
- **Surplus power**
- **Modern design**
- **Ample reserve capacity**
- **Quality built**
- **Improved utility**



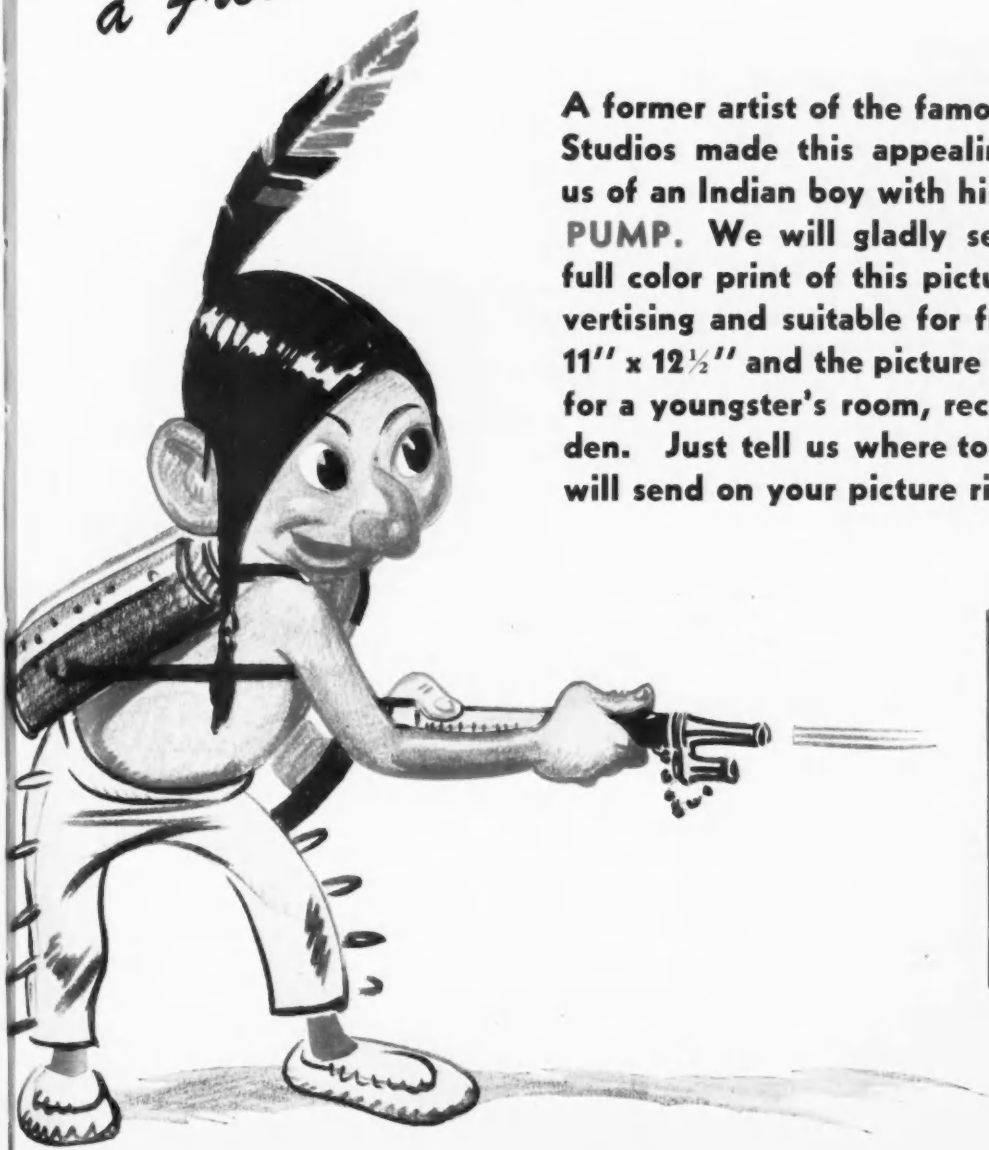
Recent pumper deliveries:

3. Boston, Mass.
2. Corpus Christi, Tex.
1. Morgantown, W. Va.
1. Alliance, Nebraska
1. Sierra Madre, Calif.
1. Cardenas, Cuba

AMERICAN-LAFRANCE-FOAMITE CORPORATION
ELMIRA, NEW YORK, U. S. A.

LAFRANCE FIRE ENGINE AND FOAMITE LIMITED
TORONTO, 9, ONTARIO, CANADA

We Want to Send You a Free Print of this INDIAN Drawing!



A former artist of the famous Walt Disney Studios made this appealing drawing for us of an Indian boy with his INDIAN FIRE PUMP. We will gladly send you free a full color print of this picture without advertising and suitable for framing. Size is 11" x 12½" and the picture is just the thing for a youngster's room, recreation room or den. Just tell us where to mail it and we will send on your picture right away.

"Gave Splendid Service"

D. B. Smith & Co.
Utica, N. Y.

Please send us one INDIAN FIRE PUMP. We have had some which gave splendid service for more than three years. We like them very much.

Yours truly,
Shawnee Fire Dept.
J. Carnie Jones,
Fire Chief

With warm weather just around the corner, now is none too soon to order INDIAN FIRE PUMPS. Remember clear water alone—no chemicals—does the fire fighting job. If you do not already have a copy of our catalog we suggest you send for it today.

FOR INSIDE AND OUTSIDE FIRES USE

INDIAN

Clear Water

FIRE PUMPS

D. B. SMITH & CO., 411 Main St. UTICA, N.Y.

Pacific Coast Branches:

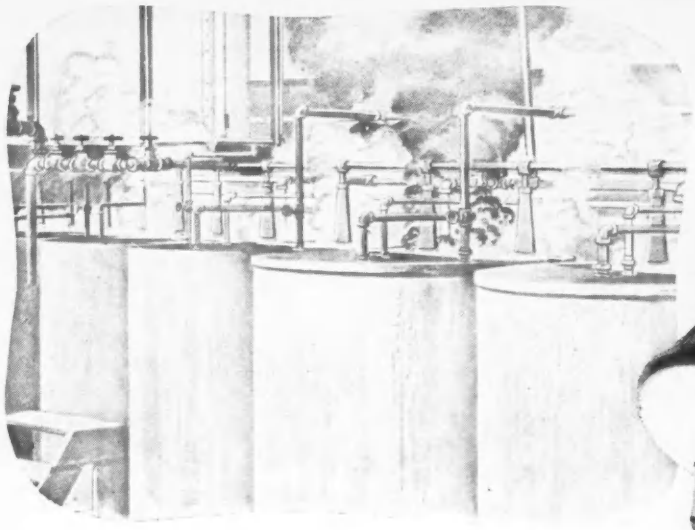
Mine & Smelter Equipment & Rubber Co. 435 Brannan St., San Francisco, Cal.

Inc. D. B. Smith & Co. 417 E. Third St. Los Angeles 13, Cal.

Carco-Conwhit Co. 520 S.W. Pine St. Portland 4, Oregon

The Conwhit Co. Klamath Falls Oregon

Mill & Mine Supply 2700 4th Ave., So. Seattle, Wash.



LIKE SNUFFING OUT A CANDLE

Just a *hint* of a blaze in a flammable liquid...and a Kidde built-in system goes into action fast. A blanket of carbon dioxide covers it like a candle-snuffer...out goes the flame before it can spread!

Fast fire-killing is just *part* of the Kidde method. The "after it's out" advantages are equally outstanding. The dry, inert gas leaves no mess to be cleaned up—keeps the liquids themselves *uncontaminated, undiluted.*

Against electrical fires, Kidde systems are equally fast, equally safe. *Fast,* because carbon dioxide quickly penetrates wiring and windings. *Safe,* because there's no water-soaking of equipment or rotting of insulation.

Class B fires in flammable liquids, Class C blazes in electrical equipment... these are the *tough* fires to fight. The ones against which ordinary water-type extinguishers are useless. *But* the ones for which underwriters specifically approve Kidde equipment.

Before one of these hard-to-fight fires gets a chance to damage your plant, study the accompanying list of danger points. Then ask a Kidde representative how best to protect them.

Kidde Kills Tough Fires

PROCESS ROOMS
OVENS
SPREADERS
MOTORS
STORAGE ROOMS
MIXERS
COATERS
TRANSFORMERS
DIP TANKS
AGITATORS
WASHING TRAYS
CONTROL PANELS

K Kidde

THE WORD "KIDDE" AND THE KIDDE SEAL ARE TRADE-MARKS OF WALTER KIDDE & COMPANY, INC.

Walter Kidde & Company, Inc. • 140 Cedar Street • New York 6, N. Y.

THIS ADVERTISEMENT IS ONE OF A SERIES APPEARING CURRENTLY IN INDUSTRIAL PUBLICATIONS

Volunteer Firemen

Volume 12 Number 3

Published by the National Fire Protection Association, a voluntary non-profit organization, 60 Batterymarch St., Boston 10, Mass.

Percy Bugbee	*General Manager*
Robert S. Moulton	*Technical Secretary*
Horatio Bond	*Chief Engineer*
Warren Y. Kimball	*Editor*
Charles S. Morgan	*Advertising Manager*
Anne Bailey	*Associate Editor*

CONTENTS

For March, 1945

	Page
Firemen's Training Report	6
Systematic Instruction	6
State Fire Colleges	6
Promotional Short Course	7
Canadian Reports	7
United States Reports	7
Stop That Fire before It Reaches the Road, by Willard Hall	10
Activities of Women's Auxiliaries?	11
Should Firemen Make Electrical Inspections? by R. D. MacDaniel	12
S.S. Gaspar de Portola Goes to Blazes	14
New N.F.P.A. Manual on Airplane Crash Fire Fighting	16
Another Country Heard From	22

THE cover picture this month shows the Lacoste Baby Home in Auburn, Maine, where 16 children, from 3 months to 5 years in age, and one nurse lost their lives in an early morning fire, January 31. Fires of this nature may surprise some authorities who have always thought of institutional fire safety in terms of protecting large establishments rather than small, individual dwellings. However, this disaster makes clear that fire and health officials must think of providing fire safety in the smaller homes and nurseries, regardless of height or area.

Damage loss from this fire was only $2,500, yet more than 50 per cent of the total value was involved. Some thought should have been given to the low property value and possible lack of fire protection in such a house before allowing 21 babies to be boarded there. Many states do not permit a number of children to be housed in any such building as the Lacoste Baby Home proved to be.

According to Fire Chief Ralph H. Harnden of Auburn, the fire started from a stove pipe passing through a wall between the kitchen and bathroom. Due to lack of fire stops, the fire travelled through channels between the floor timbers and walls to the attic and other portions of the house. A metal ceiling in the room adjoining the bathroom kept the fire from showing until sufficient heat had developed to cause an explosion which immediately involved the entire house in flames.

In the excitement of trying to get the babies from the building, the attendants failed to call the fire department until it was too late to use the telephone. Due to this delay, Chief Harnden reported, "Lives were all lost before we got the call to go."

It is reported that representatives of the State Welfare Department had told the proprietor of the Lacoste Baby Home that renewal of the license for 1945 would be held up until a certificate of approval was obtained to indicate that the house was not a fire hazard. The fire department had received no request for such certificate prior to the fire.

WE wish to thank the fire companies and departments, members of the Volunteer Firemen's Section, who have so promptly and fully completed the questionnaire regarding their organization. These will be tabulated and reviewed in VOLUNTEER FIREMEN. Thanks to your splendid cooperation we will be able to give you more helpful and valuable information in the months to come. As a result of your cooperation, we will be able to answer many of your questions about fire company organization for which representative data heretofore has not been available.

FIRE losses in the United States during the month of January were $44,865,000. These were 16 per cent more than the losses for the same month last year, $38,572,000, according to figures released by the National Board of Fire Underwriters.

The fire losses for the twelve months ending in January totaled $429,831,000, as compared with $391,074,000 for the twelve months ending January, 1943.

Fire losses in Canada during January were $4,169,600, as compared with $2,907,250 in the same month of 1944. An estimate of $1,000,000 for unreported losses added to these above figures would place the January Canadian loss at $5,169,600.

YOU hear a lot these days about "war nerves" on the home front. Folks who would like to take a "sock" at the Nazi and Jap but can't get across the water, often are taking it out on each other when things don't go just right. We mention this to point out that like every other organization engaged in fire protection, the N.F.P.A. office has its manpower shortage. If, occasionally, you don't get your magazines or other publications just as promptly as you should, please don't shoot, just write us about it.

Firemen's Training Report

FIREMEN'S training work has undeniably suffered due to wartime curtailment, but most states reported a new enthusiasm shown by firemen in various phases of firemanship instruction. At the 17th Annual Fire Department Instructors' Conference at Memphis, Tennessee, January 9–12, more than 600 leaders and instructors in firemen's training registered from all over the United States, from Canada, and from the Canal Zone. Chairman of the Conference was Richard E. Vernor, president of the N.F.P.A.

W. A. Ross, "Art" Ross, chairman of the N.F.P.A. Committee on Firemen's Training, conducted a one-day meeting of this committee prior to the FDIC meeting.

Many training programs plan a vast expansion after the war, the plans for which are well under way. A general survey of firemen's training, conducted by VOLUNTEER FIREMEN as a service to the Firemen's Training Committee and other fire service instructors, shows perhaps incomplete but significant figures for the year's instruction programs.

In the fiscal year, ending June 30, 1944, approximately 56,000 firemen received training under the various statewide programs as compared with 100,000 in 1943. Of these, about 20,906 officers and men underwent systematic training. Through the comprehensive unit training courses of state and regional fire schools, 4,094 other firemen completed instruction periods. City fire departments have also conducted drill programs. No attempt has been made to compile the figures for this instruction, but it is obvious that the total number would be impressive. A conservative estimate would number these men at perhaps 30,000.

The use of hose streams to extinguish a magnesium fire was demonstrated at the Memphis Fire Department Instructors Conference by Lt. Harry W. Wolff of the Chicago Fire Department with the aid of Memphis firemen.

In compiling this report a slightly different questionnaire was used this year on the recommendation of the Chairman of the N.F.P.A. Committee on Firemen's Training, Mr. W. A. Ross, U. S. Office of Education. It was designed to determine the number of officers and men enrolled in training and the number completing the courses. Information was also requested on the attendance at state and regional

SYSTEMATIC INSTRUCTION

	Rank and File Firemen		Officers		Hours in Course	
	Enrolled	Completed Course	Enrolled	Completed Course	Rank and File	Officers
Alabama	1,177	386	127	121	100	30
Arkansas	546	501			10	
California	3,055	3,055	99	99	72	19
Colorado	700	500			24	
Connecticut	200	176	13	11	22	30
Delaware	274	207			24	
Indiana					25	1–2
Iowa	140	140			30	
Maryland	751	531			69–75	
Massachusetts	784	783			20	
Michigan	632	571	432	432	30	100
Minnesota	1,119	1,119			6	
Mississippi	758	758			18	
Missouri	356	356			40	
Nebraska	1,051	800			18	
Ohio	850	850	108	108	40	40
Oregon	1,070	1,070	7	7	40	30
Pennsylvania	1,586	1,210	27	27	54	30
Virginia	462	400			30	
Washington	4,315				4	
Wisconsin	526	520	33	32	50	30
Wyoming	6,136	6,136			30	
Total Reported	26,488	20,069	846	837		

STATE FIRE COLLEGES

	Rank and File Firemen		Officers		Hours in Course	
	Enrolled	Completed Course	Enrolled	Completed Course	Rank and File	Officers
Alabama	86	84			30	
Arkansas	736	629	14	14	16	30
Connecticut			106	76		36
Florida	130	98			30	
Georgia	550		35	30	12–18	22
Illinois	517					
Indiana	454					
Iowa	210				20	
Kansas	275					
Maine	1,800				10	
Michigan	120	120	47	47	10	10
Minnesota	482	482			26	
Montana	93	93			18	
Nebraska	125	125			20	
New Mexico	151	151			18	
North Carolina	370	353			9 (sess.)	
Oklahoma	549	442			30	
Pennsylvania	545	304			45	
South Dakota	367	367			30	
Texas	396	396			40	
Washington	295	283			20	
Total Reported	8,251	3,927	202	167		

The interesting group of drawings and cartoons illustrating this article show high lights of the Fire Department Instructors' Conference at Memphis last January. They were prepared by Boersig, cartoonist and artist of the Cleveland Fire Department.

fire schools for both officers and men, and on the number of men enrolled in state fire training courses of a promotional nature.

It is interesting to note that 20,069 firemen and 837 officers completed units of systematic instruction. The state fire colleges had a total enrollment of 8,251 firemen, of whom 3,927 completed the course, less than 50 per cent of the enrollment. Of 202 officers enrolled at the fire college, 167 completed the course.

The various states reported a total of 234 qualified instructors participating in their state programs. A few are full-time men, but a larger number are experienced fire officers who qualified to assist in the work. The promotional type of short course reached more than 1,900 fire departments and stimulated considerable demand for more training.

It is not possible to report all the detailed activities in the firemen's training field last year, but an attempt is made to summarize the high lights of the program, state by state:

CANADA

BRITISH COLUMBIA. The province conducts "Fire Schools" with instructional lectures at the annual conventions of the British Columbia fire chiefs and firemen.

NEW BRUNSWICK. The province uses the printed lectures from the Ontario provincial schools in a province-wide training program under Fire Marshal H. M. Armstrong. Regional classes are held one night a week during winter months and one lecture, followed by discussions, given or read each time.

ONTARIO. Deputy Fire Marshal C. W. Caskey, reporting for Fire Marshal W. J. Scott, has provided an interesting review of firemen's training work as it is being conducted in this province, which is perhaps doing more than in any other Canadian province in the field of firemanship training. The Fire Training School was held at the University of Toronto, November 17–20, 1943, with 97 men in attendance and a regional training school was held at Timmins, June 29–30, 1944, with 38 men registered. This was a marked reduction from the previous year and was due to the fact that civilian defense activities were disbanded two months before the Toronto School was held. In addition to these schools, employees of the Ontario Fire Marshal's Office have given training to 500 firemen. Some of this training was with the aid of sound films. Instruction probably averaged 90 minutes per man. The 1944 Provincial Fire School at the University of Toronto had an increased attendance of 177. A shortage of personnel has made the continuance of the training program difficult, but in 5 years the Regional and Provincial Training Schools have had an attendance of 1,703 men. It is the aim of the Ontario program to use a different lecturer for each subject at the provincial and regional schools, so that no speaker is on the program more than once. About 95 per cent of those attending provincial and regional schools complete the course, at which time a certificate and lapel button are presented.

PROMOTIONAL SHORT COURSE

	Departments Reached	Men Reached	Average Hours Instruction Per Man
Arkansas	14	400	12
California	26	732	16
Delaware	4	97	10
Georgia	12	200	12
Illinois	279	1,651	3–4
Indiana	500		
Iowa	250	900	
Kentucky	44	670	20
Michigan	19	1,089	50
Missouri	54		
Montana		90	1 day course
Nebraska	108	619	8
North Dakota		619	3
Ohio	3	73	8
Oklahoma	79	113	3
Pennsylvania		927	
Tennessee	26	399	10
Texas	284	4,819	4
Washington	150	5,400	4
West Virginia	50	127	20
Wisconsin	38	1,152	50
Total Reported	1,940	19,987	

The Memphis fire department assembly hall was jammed to capacity by the more than 600 instructors present.

UNITED STATES

ALABAMA. The Alabama Firemen's Training Program as reported by Chief W. M. Walton showed a total of 1,177 firemen and 127 officers enrolled in systematic training classes in addition to 86 men given training at the State Fire College. Chief Walton reports that interest in firemen's training is increasing in Alabama, but that work still remains to be done in selling the fire chiefs in many communities on the need and importance of firemen's training. The Eighth Annual Training School for Firemen was held from May 29 to June 3, 1944, at Tuscaloosa, included both paid and volunteer fire departments, Army fire groups and industrial fire departments. Work given included basic units 1–4 following the Oklahoma Manuals and basic and advanced training in inspection practices conducted by Emmett Cox of the Western Actuarial Bureau. The Officers' Training Course consisted of a 30-hour conference on the Duties and Responsibilities of Departmental Organizations.

ARIZONA. No reports on firemen's training activities in Arizona have been received for the past training year.

ARKANSAS. Fire Department Instructor Carl S. Smalley reported the total of 546 men attending the systematic training program and given training in minor extinguishment. During the past school year 736 men were enrolled in the Annual State Fire College to which both basic and advanced training was given. Chief Smalley noted that there had been a considerable turnover in fire department personnel during the year which made the training work of more than usual importance. This condition also prevails in a number of other states. During the latter part of 1943, ten regional fire schools were held with a total enrollment of 400 firemen. The attendance at these schools was disappointing due to restrictions regarding the use of gasoline and tires, so that the regional schools were discontinued until the war is over or until such restrictions are removed, when the training program will be increased.

CALIFORNIA. Mr. Samuel L. Fisk, Chief of the Bureau of Trade and Industrial Education, and Chief Thomas S. Ward, Supervisor and Instructor of Fire Training, reported that considerable firemen's training activities were mainly carried out through local systematic training courses. Rank and file firemen's training consisted of 72 hours of instruction, including such subjects as the care and use of equipment, water supply and control, fire control, salvage operations, rescue practices, pump operation, fire investigation, and fire prevention. In addition, officers received a 19-hour course in instructor training, administration, and conference leading. These men are responsible for the training of approximately 7,000 industrial fire brigade members, plus the training of rank and file industrial plant personnel in the use of fire equipment, fire control methods, and fire prevention. It is reported that additional qualified state fire instructors will be placed in the field next year. It is pointed out that the figures reported, while quite large as compared with some other states, are actually incomplete, because no record is kept of the number of men trained in local schools or industrial plants. The California

Instructors attending the FDIC meeting at Memphis made sure they had a seat at the dinner tables by carrying their chairs along with them from meetings to meals.

program of training is based upon individual fire department work directed by itinerant instructors.

COLORADO. State Fire Instructor Charles O. Bonnelle reported that 700 firemen were enrolled to receive rank and file firemen's training during the past school year. No separate officers' schools were held. In addition a two-day fire college was held prior to the convention of the Colorado State Firemen's Association, June 19–20. No detailed attendance figures were kept for this Fire College, but 45 departments were represented at a roll call of departments. The past year has seen considerable development through the institution of a permanent state-wide program for fire service training with 30 fire departments participating regularly at centers of training. Instruction is brought to each center once a month for two hour sessions, making a total of 24 hours a year. This instruction is under the direction of the Colorado State Board for Vocational Education. The cost of the training program is shared by the state and the local fire departments.

CONNECTICUT. Dr. A. M. McCullough and Chief John S. Pachl of the Connecticut Bureau of Public Service Training report that 387 men of all ranks participated in some form of training in the past year. A teacher training program was held to obtain more instructors to permit expansion of the training program during the current year. One development in the Connecticut program was the appointment of a joint committee of fire officers and school authorities to develop a course of study on fire prevention for use in the schools of the state. Another outstanding feature of the past year was a 36-hour officers' conference which consisted of a general over-all program on the essential problems of fire fighting to bring officers up to date on the latest developments. This program was conducted as an annual fire college, June 5–6. The present chief fire instructor is Chief John S. Pachl, on leave of absence from the New Haven Annex Fire Department. In addition to the Fire College Training for Officers, a 30-hour teacher training course was completed by 11 drillmasters.

DELAWARE. Mr. H. F. Sheldon, Coordinator of Firemen's Training, reports that 12 out of 47 fire companies in Delaware received training. Firemen and some women were induced to take a 10-hour course to stimulate interest in regular courses. It was found that this increased the membership for some companies. The training program was sponsored by the State Board of Education assisted by four state volunteer firemen associations. Some 97 men from 4 fire departments took the 10-hour promotional type of short course and 207 firemen completed the 24-hour systematic training course. Mr. Sheldon reports that all 47 fire departments of the State should receive training with particular assistance provided for officers and apparatus drivers.

FLORIDA. Chief J. F. MacMillan, State Fire Coordinator, reports that 41 Florida departments and 3 Georgia departments were represented at the 14th Annual Fire College held at Miami, October 23–27, 1944. The Fire College attendance for the previous fiscal year was 238, including 169 representatives of military fire departments. A 30-hour, unit course was given in four different basic and advanced units in addition to fire department instructors' training. These State Fire College programs appear to be the only state-wide training work in Florida. Chief MacMillan points out the need for a full-time state fire instructor under the State Department of Trade and Industrial Education. However, a large amount of instructive material has been made available to the firemen of the state through the magazine, *Florida Firemen*, published by the Florida State Firemen's Association under the direction of Chief H. R. Chase of Miami, as editor.

GEORGIA. Mr. Harry Phillips, Director of the Georgia Fire College, reports that the 10th Annual Fire College, May 3–5, conducted three 6-hour sessions with 350 men receiving either basic, advanced, or teacher training courses. In addition to the Fire College there were 4 zone schools with an attendance of 350 firemen who received 12 hours of training. One outstanding feature of the 1944 Training Program was an officers' training course in advanced firemanship conducted by Mr. W. Fred Heisler of Oklahoma A & M College. Thirty officers completed this 22-hour course. Promotional short courses were held for 12 departments and 200 firemen received an average of 12 hours instruction. In conjunction with the Vocational Education program the Fire College adopted a state-wide systematic fire department training program, including various phases of fire fighting and fire prevention as well as teacher training. Director Phillips reports that the greatest need at present is for a full-time paid instructor to promote year-round training in the state.

IDAHO. Chief Frank Pulaski of Boise reports that there was no fire college or state fire college held in Idaho. However, some Idaho fire departments were represented at the Montana fire school

ILLINOIS. State Fire Marshal John H. Craig, under whose direction the Illinois fire instructors operate, reports that his department had three full-time instructors working throughout the state during the past year. Two of these men continue to devote themselves entirely to firemen's training work, while the third conducts a demonstration program on practical fire prevention. The state has not adopted a graded course of study, because the instructors are well acquainted with the various fire departments and have been getting good results by giving individual departments the instruction they appear to particularly need. In addition to the 279 towns visited, and 1,651 men reached in this itinerant training program, the 20th Annual Fire College held at the University of Illinois, June 6–9 reached 517 members of 150 Illinois Fire Departments. Besides the fire department instruction, 29 visits were made to state institutions. Twenty-five industrial plants were visited and given intensive training and a special course of study has been carried out by the Black Hawk Fire Fighters Association using the training program of Chief J. W. Just of Maryland. About 250 men are participating in this program.

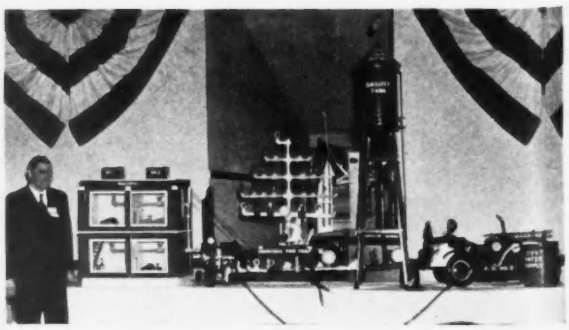
INDIANA. Robert F. Hamm, Director Firemen's Training for the Indiana Inspection Bureau and Francis Hartman, Fire Department Instructor for Purdue University, report activity in many phases of training work during the past year. A three-day Fire College was held from June 12–14 with 454 men in attendance. Both fire prevention and fire protection subjects and demonstrations were presented, as well as fire fighting evolutions. Training for rank and file firemen in the state falls in two categories. The first, is the systematic training following the Oklahoma program with 253 departments taking this course under qualified local instructors. The second phase of the rank and file training is a departmental training program conducted by State Instructors Hamm and Hartman. This consists of operational training including simplified hydraulics, pump operations, ventilation, masks, inspection, and other subjects. More than 25 such schools were held with an average of 25 classroom hours each. At each departmental school, an officers' meeting was conducted with one to two hours of round table discussion. Twenty to thirty hour instructor training courses are carried out at three-day regional schools. Eight such schools were held during the year. These men carried out the rank and file training program in given local departments. More than 500 municipal and industrial fire departments have been contacted in the promotional type of training program. The purpose of these is to encourage the start of training, to assist training programs already under way, and to check on the result of training programs. One of the most outstanding developments of the Indiana Training Program has been their most interesting monthly training and educational bulletin carrying problems and fire fighting tactics and information on fire protection problems. In addition to these activities, fire departments are given two or three day courses in inspection techniques

IOWA. The 20th Annual Fire College was held at Iowa State College, Ames, with the attendance of 210 from 55 Iowa departments. At the end of the fiscal year, Chief F. F. Hemphill resigned as State Fire Instructor and returned to his own department. In a period ending July 1, 1944, state fire instructors visited 250 towns and assisted in drilling 900 volunteer firemen, each of whom received a certificate. In addition, they held 4 instructors' schools at which 28 men completed training and 8 30-hour schools gave training in drill evolutions. One of the schools was at a state institution and another was at an ordnance plant. One hundred and forty men completed 30-hour courses.

KANSAS. Director Harold G. Ingham, University Extension Division, reports that the only statewide organized training program during the past fiscal year was the Annual Fire School conducted at Wichita in September, 1943. A similar school held during September, 1944, will be included in the records for the next fiscal year. A total of 296 persons were present of which 275 were firemen, fire officers and plant fire brigade men. These men represented 42 fire departments and 21 industries. The school was conducted for 2½ days with two evening sessions.

KENTUCKY. Captain V. A. Beam, Coordinator Firemen's Training, reports that a new comprehensive training program is being organized in Kentucky under the Division of Vocational Education cooperating with the Kentucky Inspection Bureau and Kentucky Municipal League. This was made possible by a new budget passed by the State Legislature. Each of 14 district vocational schools in the state will act as a firemen's training center under

Left FDIC leaders: Chief Harry K. "Smoky" Rogers, vice-chairman of the meeting; W. Fred Heisler, Oklahoma A & M. College; Robert F. Hamm, Indiana Fire Service Training, recording secretary; Richard E. Vernor, chairman of the FDIC and president of the N.F.P.A.; Mrs. Connie O'Sullivan, hostess to the convention; Chief O'Sullivan, host to the Conference; Emmett Cox of the Western Actuarial Bureau, secretary of the FDIC. Below. "Automatic Sprinklers and the Fire Department," demonstration by Chief Victor Drury of Seagram and Sons Co.



Official Photo USAAF

The Army trains its personnel for auxiliary fire service at military establishments to augment local fire fighting forces. These pictures, taken at Chanute Field, Illinois, were contributed by Major William C. Hodapp of the Air Corps. *Left*: Crash trucks in operation using blast streams on a burning plane. *Right*: Soldiers receive instruction in the use of a pumper as they connect a soft suction hose.

the supervision of the Teacher-Coordinator of Firemen's Training. It is planned to conduct continuous training in each department enlisting in the program, and there will be two or more instructors in each of the 14 districts. In addition an outline for private plant fire brigade training has been completed and this training will start as soon as the brigades are enrolled. A 4-day Firemen's Training Conference was held in Owensboro, August 24-27 during the Annual Kentucky Firemen's Association Conference.

MAINE. Lieut. James J. Cowan, President of the Maine Fire Department Instructors Association, reports that 1800 firemen received the 10-hour training course at Regional Schools. These schools are under the direction of State Civilian Defense. The State Director of Vocational Education, Mr. Austin Alden, is ready to cooperate with a committee of the Maine Fire Chiefs' Association in developing a permanent state-wide training program. Ten Regional Fire Schools have been held throughout the State, but not all departments received training. Seven qualified firemen trainers were used and many places received training under the Defense Program that had none before. The program was enthusiastically received, particularly in the smaller communities. The larger cities in the State such as Auburn, Bangor, Lewiston, Portland, have their own training programs.

MARYLAND. Chief J. W. Just, Director, Fire Service Extension, University of Maryland, reports that 622 firemen from 46 departments were enrolled in 30 classes taking the 75-hour basic training course and that 129 firemen from 6 departments enrolled in 5 classes taking the 65-hour advanced training course. Some 415 firemen completed the basic training course and 116 completed the advanced training course. In addition to these two courses, a third section has been added to the Maryland Training Program with an additional 57 hours of firemen's training instruction. This makes a total of 201 hours of instruction for firemen completing the three courses.

MASSACHUSETTS. Mr. John E. Lusk, Assistant Supervisor, Public Service Occupations, reports that their Department has organized and supervised firemen's training classes for local fire departments, auxiliary fire departments, U. S. Navy Waves, Army Ordnance, ammunition plants, the Women's Division of the State Guard, Plant Fire Brigades, and has furnished instruction material for personnel relations officers of four New England Navy Yards and to commissioned officers on Navy ships. During the year professional improvement classes for firemen training instructors were held monthly at Brookline with an average attendance of 20 men. A new text was prepared on "Standards for Promotional Examinations in the Fire-Fighting Field." It was noted that the general practice of working overtime on other war jobs by public service employees, including firemen, has proved to be a problem in organizing training classes.

MICHIGAN. Mr. M. D. Whale, Supervisor, Public Service Training, and Director C. A. Fisher, Extension Service, University of Michigan, report a very active training program with 571 firemen completing a 30 hour course in basic evolutions, while 432 officers completed a 100 hour course in general fire fighting, administration and basic evolutions. These latter courses were conducted as officer conferences. Training was also given to the rank and file firemen by a full-time state instructor and 16 other instructors. The officer conferences were conducted by 36 qualified local instructors. In addition to these systematic organized classes, organized training was also given at the Annual State Fire College. The 16th Annual Fire College was held June 11-14 this year on the campus of the University of Michigan. Last year's Fire College, covered by this report, included ten hours of training in basic evolutions for rank and file firemen and ten hours of special courses in simplified hydraulics and arson investigation for 47 officers attending. Itinerant instructors gave an average of 50 hours instruction per man to 19 departments reaching a total of 1,089 firemen. One of the outstanding developments of the year was the employment of Chief Edward C. Rumsey of Detroit as State Itinerant Fire Instructor through the Extension Service of the University of Michigan. The work of conducting Town Fire School programs for volunteer fire departments has continued and it is planned to add itinerant instructors as needed. A new Fire College was organized at Houghton College on the Upper Peninsula of Michigan in September with 162 firemen participating.

MINNESOTA. Fire Marshal Leonard C. Lund reports that the Northwest Fire School held May 15-17 at the Public Safety Building, St. Paul, under the sponsorship of the State Fire Marshal Department, was the most successful ever held. There was a registered attendance of 482 and in addition others were present who did not register. Approximately 116 Minnesota towns were represented as were a number of out-of-state departments. One of the most interesting features was a fire department evolution drill contest. This involved eight teams of volunteer fire departments who had been winners of competitive evolutions at Regional Fire Schools the previous summer. The winners of this contest at the Northwest Fire School were Detroit Lakes, 1st; Anoka, 2nd; and Keewatin, 3rd. The winners were awarded war bonds. This program was so successful that new evolutions were drawn up, more advanced than last year's for contestants at 1944 regional schools. Finals will be held at the 1945 Northwest Fire School. In the 10 Regional Fire Schools and the Northwest Fire School there was a total registration of 1,589 firemen representing 318 towns

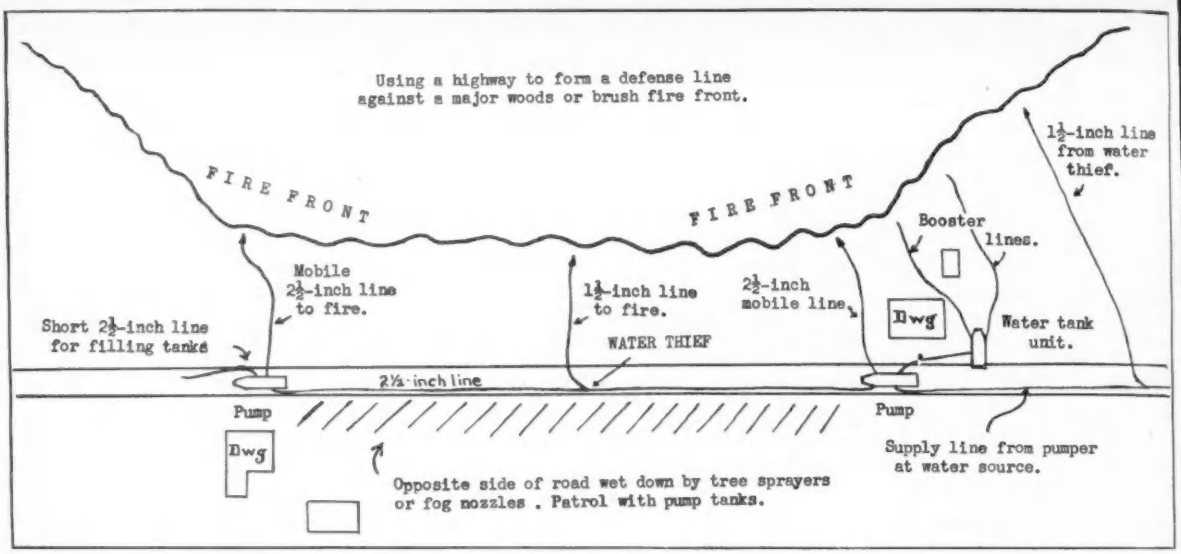
MISSISSIPPI. Mr. E. F. Mitchell, Acting State Supervisor, Trade and Industrial Education, reports that 758 firemen were given the 18-hour basic training course during the past year. He states that the training program now reaches departments in the larger cities of the state and plans are being made to reach the smaller communities.

MISSOURI. Mr. M. I. Parker, Engineer of the Missouri Inspection Bureau, and Mr. W. Bush Walden, State Fire Department Instructor, report that 21 fire schools were held in 18 cities and towns of Missouri with 356 men in attendance. Various units of the state fire training manual were taught, as needed, according to the equipment available and the problems confronting each department. In addition to these regular classes, assistance was given to 54 other communities. Unfortunately, the State Department of Education has discontinued its participation in the Firemen's Training Program not believing that a full-time instructor was required. Most of the training courses were held in towns requesting assistance. The Missouri Inspection Bureau has provided a full-time instructor to take care of these requests. One interesting development in firemen's training in Missouri has been the organization of an officers' training school in the St. Louis Fire Department.

MONTANA. The Annual Fire School was held at Polson with 93 firemen from 24 departments from Montana and Idaho attending. At the 1944 School at Polson there were 104 firemen from the three states of Montana, Idaho, and Washington in attendance. The Montana State Firemen's School is sponsored by the Polson Volunteer Fire Department and the City of Polson. The Montana State Firemen's Association at their last convention appointed a committee to get in touch with the State Board of Vocational Education in an attempt to obtain a full-time instructor to cover all volunteer departments in the state. In November, 1943 Chief Henry Quane of Anaconda conducted a one-day short course at Conrad with 90 firemen in attendance from towns within an area of 75 miles. Chief Quane reports that special attention is being given to the training in the use of resuscitators and that most of the fire departments in Montana are using these machines with gratifying success.

(*Continued on page 24*)

A Memphis fireman repairs Chairman Vernor's glasses, proving that the Memphis Fire Department stands ready to meet every emergency.


Using a highway to form a defense line against a major woods or brush fire front.
FIRE FRONT
FIRE FRONT
1½-inch line from water thief.
Booster lines.
Mobile 2½-inch line to fire.
1½-inch line to fire.
2½-inch mobile line
Short 2½-inch line for filling tanks
WATER THIEF
Dwg
Water tank unit.
2½-inch line
Pump
Pump
Dwg
Supply line from pumper at water source.
Opposite side of road wet down by tree sprayers or fog nozzles . Patrol with pump tanks.

STOP THAT FIRE!

Before It Reaches the Road

By Willard Hall, Chairman Engineering Committee,
Woonasquatucket Valley Firemen's League

Illustrations by Warren Y. Kimball, Editor

Mr. Hall, Chairman of the Engineering Committee, Woonasquatucket Valley Firemen's League, Chepachet, Rhode Island, wrote this article after reading Chief Levering's letter in the February VOLUNTEER FIREMEN. Have other readers further ideas for developing efficient methods of handling brush or woods fires that they believe other departments might find interesting or helpful?

THE man on the street expects a forest fire to stop dead at a road and is almost speechless to see fires hop four-lane highways with ease. Most large forest fires in the northeast owe their size to being helped across a road or two by the system of control that waits for the fire to burn clean up to the roadside to destroy all the fuel on that side. These "firefighters" usually untangle their equipment with a bewildered idea that something has gone wrong in spite of all their work and planning.

There is another school of fire fighters who never let a fire burn up to a roadside, even though the unburned strip they save is only a rod or two wide. The fires these men fight stay small, go unnoticed, and the lessons in the story of that narrow green strip are lost. Still that strip is all that stood between a fire stopped cold and one only delayed in its mad rush.

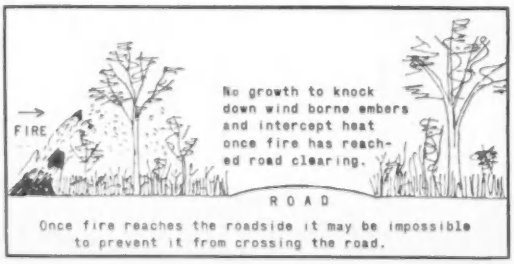
There are several reasons for meeting the fire with an attack that reaches as deep into the woods as is possible. We need the road for our trucks to move on and for our men to move on when they have to make quick shifts. Gas masks will protect against smoke, but to avoid the heat, men must give ground. The road can get smoky but it must be kept cool. The trees and undergrowth catch sparks which have clear sailing when they rise from one side of the road and float to the other. Hose streams break and spatter when they hit the underbrush with the result that the water really does more work than it does when the operations are in the open.

Stopping a fire at a road calls for an operational strip 500 feet wide with most of that distance between the road and the fire. The problem divides into two phases: knocking down the fire quickly to keep the unburned strip as wide as possible, and mopping up the sparks that have dropped like paratroopers ahead of the fire. The deeper the attack the more sparks fall on the fire side of the road.

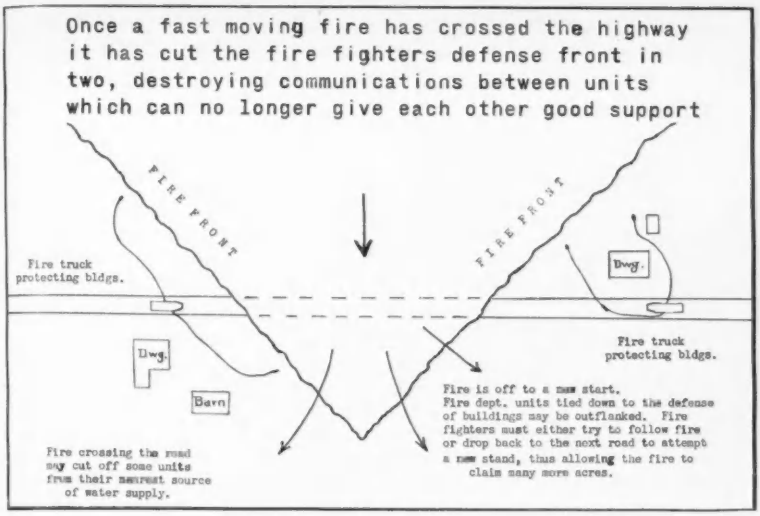
It is good practice to wet down on the side of the road away from the fire with an orchard spray rig or a fog nozzle so any sparks that do get across cannot kindle. If the road is wide enough, this wetting can be done while other crews are fighting the fire on the other side of the road. Usually this does not get done because there is not enough equipment to spare from the main battle in the early stages when the setting has to be done. Nevertheless it is something to remember to do when possible.

These road stops call for quick shifts of hose lines. In fact, the small lines are in constant motion. The best solution of this problem is to put men on the hose every 50 to 100 feet, depending on the number of men available. No one shifts his grip but moves with the hose into the woods and out again, keeping the line always tight between the men. This layout needs the clear space the road provides to handle the slack line when the hose is pulled out at one place to go in at another.

The deep attack can make good use of plenty of water, and the road puts that water within easy reach. Several nozzles may not seem necessary but they cover the ground faster at a time when speed is



Once fire reaches the roadside it may be impossible to prevent it from crossing the road.


Once a fast moving fire has crossed the highway it has cut the fire fighters defense front in two, destroying communications between units which can no longer give each other good support
FIRE FRONT
FIRE FRONT
Fire truck protecting bldgs.
Dwg.
Dwg.
Barn
Fire truck protecting bldgs.
Fire is off to a new start. Fire dept. units tied down to the defense of buildings may be outflanked. Fire fighters must either try to follow fire or drop back to the next road to attempt a new stand, thus allowing the fire to claim many more acres.
Fire crossing the road may cut off some units from their nearest source of water supply.

International

a big factor. Each one takes just so much more water so there is nothing like a 2.5-inch hose line along the road with a pumper every 1,000 feet and a "water thief" half-way between pumpers. Every pumper has a short length of 2.5-inch hose laid to fill tank trucks, and lines of 1.5-inch c.r.l. hose, up to 1,000 feet long, can be taken off the pumpers or the "water thieves" as the need arises. This line uses the larger village or even city pumpers and frees the forest fire trucks to fight the fire with only short trips, if any, to refill their tanks. On good roads, a half-mile relay is little trouble and relays of a mile or even two may be well worth the work if it reduces the job from days to hours.

Briefly, a road can be a great help in stopping a dangerous forest fire if the attack is vigorous, deep, and backed by an adequate water supply. The fight is hard and hot but it can be short and that is a lot.

Futile, old fashioned "bushwacking" patrol. Ed. We recommend backpack pumps for this job.

Activities of the Women's Auxiliaries?

To Volunteer Firemen:

I am writing on behalf of an organized women's auxiliary of a volunteer fire department. We would like to know of any other such organizations in order that we may exchange ideas.

Do you have any names of such organizations, or any information that might be of use to us? We would appreciate it greatly if you would send us what you can.

Can you also tell us whether or not there are any homes, especially in this territory, for aged or disabled firemen. We had thought of doing some welfare work along that line if there is need of it.

I believe we are one of the few women's groups thus organized, and it is quite hard for us to get any information that is of use to us. Any help you can give will be welcome.

Very truly yours,
Dorothy Rodewald,
President, Women's Auxiliary,
Arlington Heights Fire Department,
Illinois.

Here's What the Editor Replied

We are very happy to receive your letter making inquiry regarding women's auxiliary organizations of volunteer fire departments. We know that there are many such auxiliary groups doing active and valuable work. We are mailing at the present time a questionnaire to our member volunteer fire departments which includes requests for information on the women's auxiliaries. The thought occurs to us that it might be possible for the auxiliary groups to exchange information through Volunteer Firemen magazine as we have been told that many of the wives of firemen read the copies received by their husbands.

There are undoubtedly many worthwhile projects that the women can and do carry out more faithfully than the men who are kept busy with the active fire company operations. I believe that in certain parts of the country almost every volunteer fire department has a women's auxiliary.

We know that the New York State Firemen's Association maintains a very fine home for aged and disabled firemen. Some rather extensive relief work is carried on in New Jersey. However, there are many other states where a firemen's home might be a most appropriate project.

Have any readers further comment?

How many firemen's wives see the magazine?

Should Firemen Make Electrical Inspections?

By R. D. MacDANIEL
Vice President, Grain Dealers National Mutual Fire Insurance Company

Taken from a talk given before the 17th Annual Fire Department Instructors' Conference at Memphis, Tennessee, January 9-12.

IT will be readily conceded that firemen should make general inspections, but many persons (and certainly the average electrical inspector or engineer will) look askance at the idea of a relatively non-technical person having the temerity to inspect such a technical thing as an installation of electrical equipment.

It would seem that the general run of firemen are inclined to agree and consequently limit their attention electrically to an occasional extension cord and a hunt for pennies that may be concealed behind plug fuses. Such activities are well and good, so far as they go, but the average fireman could, with comparatively little knowledge, electrically speaking, and a little additional effort, make an inspection of equipment that would be very worthwhile. When it is considered that comparatively few electrical installations are inspected periodically, except as they may be by firemen, the possibilities involved for constructive work are apparent. If the firemen do not inspect electrical equipment, the chances are good that it does not get inspected — which may be one reason that the number of fires of electrical origin are now second only to those due to smoking.

Certainly a man who is not thoroughly familiar with the theories and practices of electrical engineering should not go beyond a superficial examination of electrical equipment, but there is a great deal of electrical inspection work that can be done by a conscientious fireman. He should recognize his limitations and not hesitate to acknowledge them, but he could prevent 50 per cent of the electrical fires that otherwise occur in the properties he visits. At least 50 per cent of electrical fires are due to conditions easily recognized by anyone with a fair understanding of electrical fire hazards, plus a little knowledge of the basic causes of electrical fires.

Fires of electrical origin start in one of three ways or a combination thereof: from an arc, from sparks, or from heat radiated by the equipment.

An arc is simply electrical current passing through air, which is manifest by the production of light and is accompanied by the generation of heat. The high temperatures created by an arc result in the ignition of insulation and the melting of conductors or other metallic parts so that small pieces of burning material and molten globules will be thrown about.

Arcs and electrical sparks are caused by a break in the continuity of an electrical circuit while current is passing through that circuit and result from the tendency of the electricity to continue to flow through the air space at the point of separation. This circuit break may be the result of opening a switch, or the accidental loosening of a contact, or the mechanical failure of a conductor. Or an arc may form across the terminals of a fuse that has blown due to a heavy, sustained overload or the accidental subjection of the equipment to voltages far in excess of those for which the equipment was designed. Added to the possibility of ignition of directly exposed combustible materials to the high temperatures generated by the arc itself, it is almost certain that burning insulation and molten metal will be scattered about.

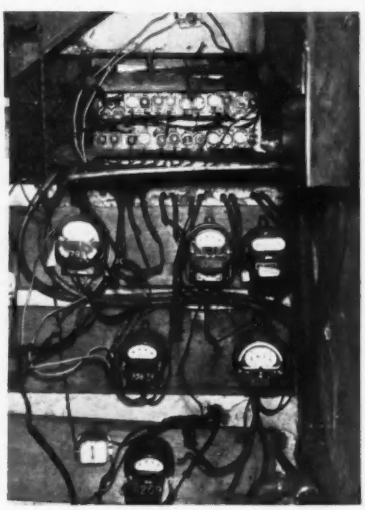
Arcs will also be produced at a point of short circuit such as may occur in an extension cord. If the flow of current is not stopped by the operation of fuses or other means, the progressive burning away of the insulation will result in the arc following back along the cord, scattering bits of molten wire and burning insulation.

THOSE are the kind of arcs and sparks that may always be expected to cause trouble if there is combustible material in the immediate vicinity or if they occur in atmospheres where flammable vapors or dusts are present. On the other hand, the minute sparks caused by the normal operation of the commutator of a brush motor, for example, part of which are in reality arcs and part incandescent particles of carbon from the brushes, are of consequence only if flammable vapors or dusts are present, or if the motor itself is covered with oily lint, such as may be the case in a sewing risk.

The third source of electrical fires is heat. Heating to the extent that it is hazardous may be a natural or an accidental occurrence. Certain substances conduct electricity, but some more so than others. The reverse of conductivity is resistivity. Copper has a higher conductivity than iron. When electrical current passes through a substance, a portion of the electrical energy is transformed into heat and the higher the resistivity of the material, other factors being the same, the greater the proportion of the energy that will be transformed. That phenomenon is made use of in the design of electrical heating equipment: space heaters, furnaces, and in the manufacture of lamps wherein a filament or conductor is heated to incandescence. Where it is desired to transmit electrical energy from one place to another without undue loss, a conducting substance having low resistivity is employed. Resistivity is relative, and when comparing the resistivity of two substances we assume that the units compared are of similar dimensions as, for example, the cross sectional area of wire. There is no substance without some resistivity and consequently the passage of electricity will occasion some change in temperature although it may be infinitesimal. The passage of current through such conductors and equipment as are used commercially will produce heat but these conductors and devices are so designed that under normal conditions the heat produced will not be sufficient to constitute a fire hazard. There are devices that are specifically designed to produce heat; that is referred to as "natural" heating, occurring in the normal operation of properly functioning equipment.

The heating that gives rise to hazardous situations is due, almost entirely to abnormal operation or to improper function-

Any fireman would know that it is not safe for a bird to nest in an electric switch box. Also, it might cause a fire.



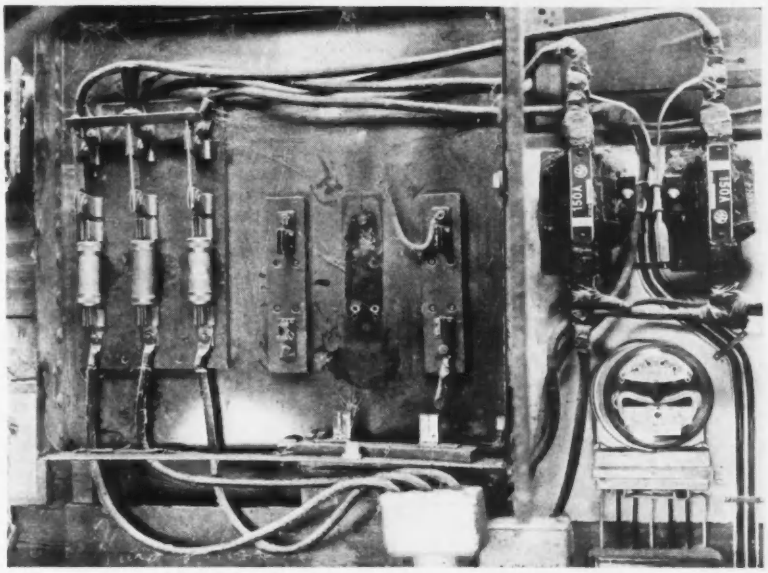
When you come upon a jumble of wires like this, you can safely conclude that they are not installed in a correct manner. This installation was tucked under a stairway with the gas meter. In case of a gas leak, a chance electric spark would provide perfect ignition.

ing of equipment. The serious heating of a motor may be due to the application of a load in excess of that for which the motor was designed; it may be due to operation at a voltage below that at which the motor was designed to operate; it may be due to lack of natural ventilation, if the air passages become clogged with dust or dirt; or from any number of other causes that may be the result of natural wear and tear, environment, load, power supply or lack of maintenance. A connection may become loosened and cause heating because of increase of resistance or arcing at that point. If this occurs at a fuse terminal, the heat may cause the melting of the fuse element thereby leading one to believe erroneously that the circuit is overloaded. Conductors may become heated because they are loaded beyond their capacity, because of accidental ground or of short circuit caused, perhaps, by mechanical injury to the insulation. Dangerous heating may be due to a number of factors some of which are electrical, some mechanical, some may be purely accidental while others may be the result of deliberate misuse or neglect.

ALL electrical equipment is designed with definite limitations and these limitations are usually indicated by a name plate or other markings. The name plate of a motor will indicate, among other things, the capacity of that motor in horsepower and the normal current (designated in amperes) that will be required by that motor when developing its full load. Control equipment for motors is likewise given a horsepower rating. Protective devices are rated in amperes. Conductors rate in amperes according to the size of the wire and the kind of insulation; most new conductors will have the safe carrying capacity and kind of insulation marked on the outer covering. Current consuming devices such as heating elements and lights are rated in either amperes or watts.

That is about all the basic electrical information that is needed in order to do this job, and it is not beyond the comprehension of the average fireman. From there on it is merely a matter of application of ordinary fire prevention, the relating of cause and effect.

It must be recognized, however, that environment must be taken into consideration when planning an electrical installation. A device that would be perfectly safe under one set of conditions might under certain other circumstances constitute a severe hazard. An ordinary single phase motor which sparks at the commutator under normal operation would be quite satisfactory in the usual boiler room. It would be decidedly unsatisfactory in a dry cleaning establishment where explosive vapors might be present, or in a flour mill where the atmosphere was filled with grain dust. Conditions of external heat and excessive moisture are likewise to be taken into consideration, not as having a direct bearing on the fire hazard but as affecting the electrical equipment itself, which in case of breakdown may become a hazard. One of the important functions of Underwriters' Laboratories is to test electrical materials and devices in respect to the conditions under which they will be used and to issue approval accordingly. Their findings are issued annually in a volume (available upon request) entitled — "List of Inspected Electrical Equipment."



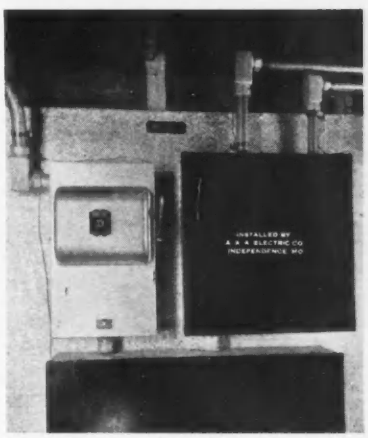
This "open face" job of open wiring, open switches, open transformers, was an easy installation to inspect because it is all wrong. There was no service switch or any bushings to protect the wires where they entered the cabinet, and protective grounds were lacking.

It might seem that with electrical equipment plainly marked as to current requirements and safe operating capacities and with full information available as to the proper type of equipment to be used under a given set of conditions, there would be little occasion for fires of electrical origin. It is true that a great many of our modern installations are being originally made in the best possible manner and with the correct type of equipment, but after the job is installed, almost anything can happen and it usually does. Processes not even thought of at the time of the original installation are introduced, thereby changing the environment; motor and lighting loads are increased, heat consuming devices are installed, maintenance is inadequate or neglected. Besides introducing hazards in themselves, such changes will adversely affect even the best of wiring systems and where the wiring job was not up to par in the first place, the hazards are increased to even greater extent. Keep in mind that unless these installations are inspected by the firemen they may not be inspected.

Obviously the fireman is not going to take things apart or is he going to make use of testing apparatus, nor is it necessary that he do so. The principal job to be done is one of compounding careful observation with a good amount of ordinary fire prevention knowledge, then applying the mixture with considerable tact in such manner as to achieve the desired results.

As a single object of analysis let us take a motor, for that device offers a wide range of possibilities. The fireman will first note its environment, whether it is dry or damp, whether the atmosphere is free of flammable vapors, explosive dust, lint, or plain ordinary dirt, and whether the surroundings are subject to ignition and conducive to the rapid spread of fire.

He will ask himself: is there anything in the environment that is detrimental to the operation of that motor? If so, then



Here is how a panel board, properly installed, should look.

eventually that motor will develop trouble. If dust, whether explosive or not, or lint, or flyings of any kind are present and the motor is not of the enclosed, self-ventilated or pipe-ventilated type, then he knows that adequate natural ventilation is impossible and the motor will overheat. If an accumulation of foreign matter in the windings is supplemented by moisture or oil then the situation is worse, for the moisture or, more particularly, the oil will cause rapid deterioration of the insulation. A drip proof case might be necessary in event of excessive moisture. Then the mechanical condition of the machine should be noted: are the windings reasonably clean? Is there evidence that oil is getting into the windings from the bearings? Are the bearings apparently being properly lubricated? Is there apparent damage to the exposed turns of the stator windings? Are the wires leading into the motor exposed and subject to mechanical damage? In other words, is the machine apparently

(*Continued on Page 20*)

Official Coast Guard Photo

S. S. Gaspar de Portola Goes to Blazes

U. S. Coast Guard Fire Fighting School Training Ship

Commander Lloyd Layman, shown below, is in charge of the Fire Fighting Section of the United States Coast Guard School at Fort McHenry, Baltimore, Maryland. Commander Layman made an outstanding record before the war as Fire Chief of Parkersburg, West Virginia. He serves on the N.F.P.A. Committee on Firemen's Training.

Official Coast Guard Photo

A FEW months ago the *Gaspar de Portola* was just another Liberty ship doomed to "sweat out" the war in a wrecked ship "graveyard" on the St. James River.

Today the same *Gaspar de Portola* is playing an important role in the solution of a complex problem that has badgered naval fire prevention and protection forces for years.

Complete solution of the problem — development and protection of new techniques of extinguishing fires in engine rooms aboard ship — is still some time off, but Commander Lloyd Layman, who presides over the Coast Guard's up-to-date fire-fighting laboratory at Fort McHenry, is satisfied enough with progress made in preliminary experiments to predict an early solution.

Employing the castoff Liberty ship as a "guinea pig," Commander Layman and his staff of highly trained assistants have covered the primary steps in extinguishing oil fires in machinery spaces aboard ship with comparative ease. The Liberty ship being used in the novel experiments — the first of their kind ever conducted aboard a vessel — was rescued from the wrecked ship "graveyard" by the Commandant of the Coast Guard, Vice-Admiral Russell R. Waesche and put at the disposal of Commander Layman to use as a laboratory and proving grounds. The *Gaspar de Portola* was surveyed and found unfit for further sea-going service in this war, prior to the time of its delivery to the fire-fighting school at Fort McHenry. She was commissioned in California in 1942 and wrecked sometime later in the Carribean.

In the initial tests conducted aboard the scarred hulk, Commander Layman proved two major points conclusively. He found that oil fires could be brought under control completely if all possible points where oxygen could enter were speedily shut off. Another point proved was that any oil fire

that may occur can be extinguished with a limited amount of water.

"At Fort McHenry a great deal of attention has been paid to the problem of engine and boiler room fires," Commander Layman stated. "In the tank and fire test house now provided ashore and the first tests aboard the *de Portola*, it has been possible to extinguish oil fires very successfully through the application of water, fog or foam. It was discovered that only a minimum of water was needed to extinguish a blaze in actual engine room space."

"Before we complete our present series of tests we hope to have licked the 'space difficulty' that has plagued fire fighters aboard vessels up until this time. Much of the trouble encountered in fighting a fire is due to the inability to get at the base of the fire. We hope to find the quickest and easiest passages to the scene of the fire as well as the speediest method of combating the blaze. Our experiences won't be considered completed until both of these 'stumbling blocks' have been eliminated."

"Finding a way to fight fires aboard ship speedily and successfully is not our only problem. We must make a thorough study of ship fires, temperatures developed in engine room fires, rate of transmission of heat through bulkheads, travel of heated gasses, etc. Our next tests on the *de Portola* will be conducted toward this end. At the present time we are installing 20 thermo couples at strategic 'hot spots' around the ship. We can find the temperature at any one of these points by checking our master thermo couple."

Important future tests that will be conducted on the *Gaspar de Portola* will involve a series of experiments including the following:

(1) Attack from engine room skylight using (*a*) water fog (*b*) fog foam.

(2) A combination of an attack from the engine room skylight and an attack from the shaft tunnel. In both cases water fog or fog foam will be used.

(3) Determine whether the uniform distribution of foam from topside is necessary or if the required concentration can be produced from one or two points.

(4) Determine whether additional steps must be taken to produce final extinguishment, such as application of foam through the regular foam nozzles.

(5) Determine whether variation in method of extinguishment is needed for fire involving diesel oil as against heavier bunker oils.

Once the correct tools, equipment, extinguishing agent and medium of application have been finally determined, Commander Layman expects to try out a series of "steps" to work out evolutions and procedure necessary to reach and attack the fire with a minimum of delay. Among these steps are:

(1) Developments of evolution for placing hose lines aboard the ship from a fireboat.

(2) Development of the most practical methods of running hose lines to any part of the ship.

(3) Determine proper steps to take if no spilled oil is involved, if level of oil in boiler room is below floor plates or if level is above the floor plates.

(4) Develop practical methods of emergency lighting where flash lights or hand lights may be inadequate or awkward to use.

(5) Determine how best to use fog nozzles for protection of personnel approaching the seat of the fire.

"Training of personnel aboard the *Gaspar de Portola* is expected to be limited to the specialized instruction necessary to sizing up a vessel fire, proper method of attack, proper sequence of evolutions and study of all problems peculiar to ship fires," the commander commented.

"The program of study outlined will be one of education rather than mechanical drill. The training will be in line with our established program at the fire fighting school. Our policy is to have the student 'think' things out rather than to attempt to memorize them. It has been proven by actual experience that it is better for men to understand what is taking place in the fire. If the men know what is taking place in a fire, they will be able to fight the blaze much better. Understanding the nature of a fire is a big step in combating it. Difference between grades of oil and the actions of each grade of oil under fire are also important factors in successful handling of oil blazes."

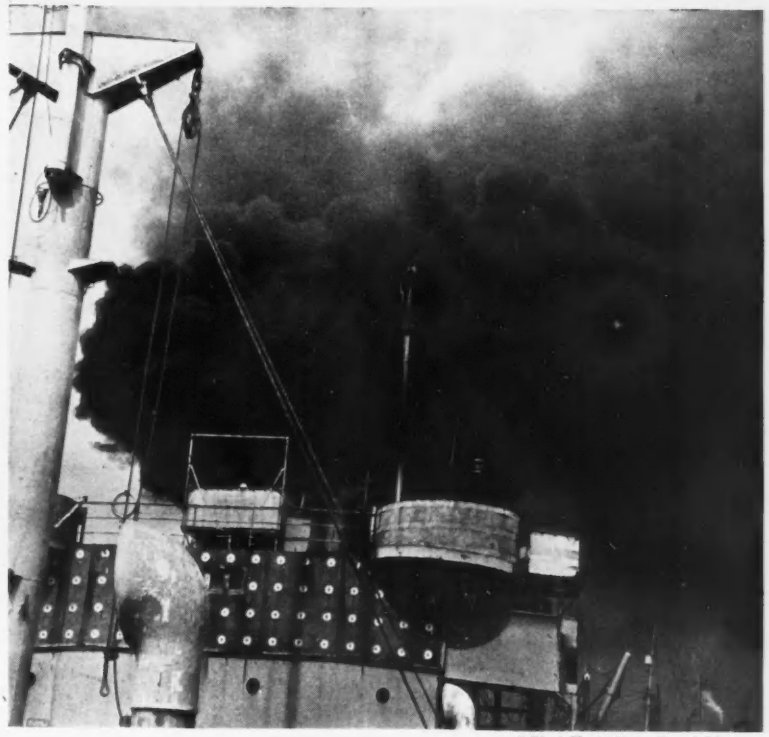
Commander Layman, who is well grounded in fire prevention and protection, has been something of a human "guinea pig" since he started the fire fighting school more than two years ago. The commander refuses to let any of his instructors or students in the class try anything that he hasn't previously tried himself. In the recent tests aboard the *de Portola*, Commander Layman was the first person to enter the blazing engine room when hoses were run down to extinguish the blaze. . . . "I always operate on the theory that if a place is safe enough for me, it's O.K. for my instructors and the students," the commander winked.

"Originality in fire fighting techniques and advanced work we have done is constantly a source of amazement to outsiders who visit the school," the commander commented.

He recalled one instance in particular where his instructors became richer by one box of cigars when an oil delivery man bet that an oil blaze couldn't be extinguished with water. "Actually the job we performed was 'as easy as shooting fish in a barrel,' " Commander Layman laughed.

In the past, the fire fighting school has been something of a showhouse and demonstration base for new fire fighting techniques. People from all walks of life have become spectators, and in some cases, participants in the tests, and the list of students that have gone through the school, in addition to Coast Guardsmen, include bankers, brokers, lawyers, butchers, bakers, garage mechanics and bookkeepers in Volunteer Port Security work,

(*Continued on page 23*)



Official U. S. Coast Guard Photo

NEW N.F.P.A. MANUAL ON *Airplane Crash Fire Fighting*

TRAINING in airplane crash fire fighting is becoming essential for every fire department from the largest city down to the smallest rural fire fighting organization. To meet this need, the N.F.P.A. Committee on Aircraft Fire Fighting is about to release an authoritative manual entitled *Airplane Crash Fire Fighting*.

The committee, consisting of sixteen military and civilian experts on aviation and fire fighting is under the chairmanship of Colonel H. G. Reynolds, Air Provost Marshal, Army Air Forces. Major H. E. Kezer, also of the Army Air Corps, is secretary to the committee.

A special sub-committee which drafted the manual consisted of Warren Y. Kimball, Editor of VOLUNTEER FIREMEN as foreman; Captain J. B. Allen, U. S. Corps of Engineers; Chief J. W. Just, Fire Service Training, University of Maryland; George W. Clough, Fire Marshal, Nassau County, N. Y.; Major H. E. Kezer, secretary of the main committee.

The table of contents of this book is listed on this page. Individual firemen, as well as departmental and company officers, will find this manual of increasing importance and interest due to the expansion of aviation now and in the future.

TABLE OF CONTENTS

1 Equipment

2 Airplane Crash Fire and Rescue Hazards

3 Rescue Features

4 Basic Fire Hazards

5 Armament

6 Fixed and Portable Fire Protection on the Airplane

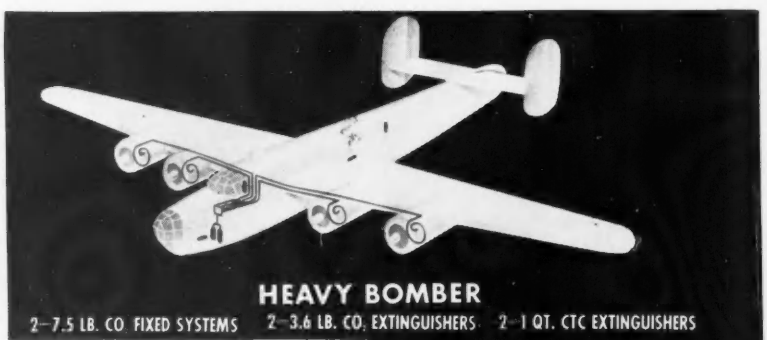
7 Anticipating Crashes

8 Response

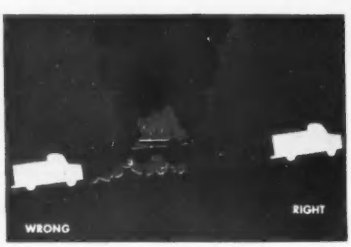
9 Rescue Operations

10 Fire Fighting

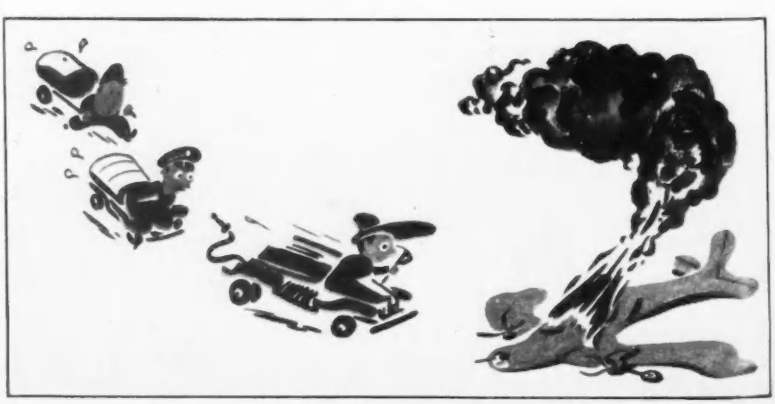
11 Airfield Operations



Typical illustrations from aircraft manual. Above: Fire fighting equipment on two types of planes. Below: How to approach an airplane fire.



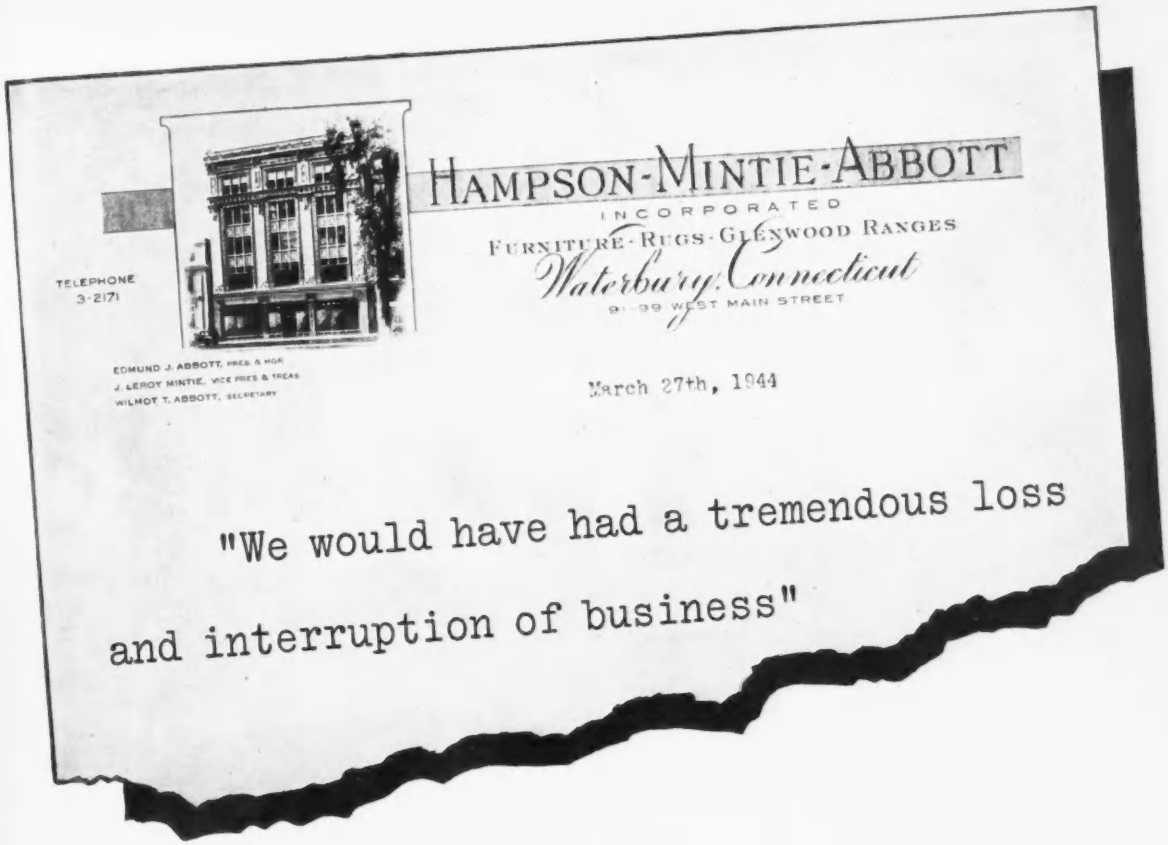
The book has numerous cartoons in color illustrating good practices in aircraft fire fighting.



IMPORTANT!

Every member fire department is entitled to one free copy of this manual as part of their N.F.P.A. membership. Provided you mail in the request certificate mailed to your department headquarters with the March N.F.P.A. News Letter. Additional copies of the manual will cost one dollar each.

NATIONAL FIRE PROTECTION ASS'N
60 Batterymarch Street
BOSTON 10, MASS.



THE ABOVE STATEMENT is from a letter written to A.D.T. by Mr. E. J. Abbott, President of Hampson-Mintie-Abbott, Inc., a leading furniture store in Waterbury, Conn. It is typical of the expressions of thousands of other business men who have escaped the crippling after-effects of serious fires through their foresight in adopting A.D.T. Protection Service.

In this case an automatic alarm was received at 6:33 A.M. on a recent Sunday from a fire which started inside an elevator partition. That there was no one in the building to discover the fire and take proper action was of little importance because the A.D.T. Sprinkler Supervisory and Waterflow Alarm System immediately and automatically summoned the fire department. Admitted by the A.D.T. guard who responded to the alarm with a key to the premises, firemen quickly extinguished the flames and minimized water damage by shutting off the sprinkler system when the fire was out.

Besides causing the sprinkler system to function as an automatic fire alarm, A.D.T. supervision guards against closed shut-off valves and other conditions that might impair the efficiency of the system. In many cases this service enables owners to make substantial economies while securing increased protection.

★ ★ ★

Write for illustrated booklet giving complete details.

A. D. T. SPRINKLER SUPERVISORY AND WATERFLOW ALARM SERVICE

Controlled Companies of **AMERICAN DISTRICT TELEGRAPH CO.** *155 Sixth Avenue, New York*

CENTRAL STATION OFFICES IN ALL PRINCIPAL CITIES OF THE UNITED STATES

A·D·T

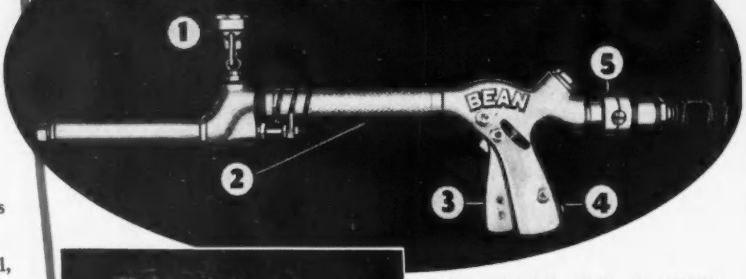
Electric Protection Services

AGAINST FIRE · BURGLARY · HOLDUP

A NATION-WIDE ORGANIZATION

ORIGINATED BY JOHN BEAN MFG. CO.

THE ORIGINAL HIGH-PRESSURE FOG FIRE GUN



600 lbs. AT THE NOZZLE!

The FMC Fog Fire Gun—built only by Bean—is designed especially for High-Pressure fire fighting. There's nothing else like it!

Note these features:

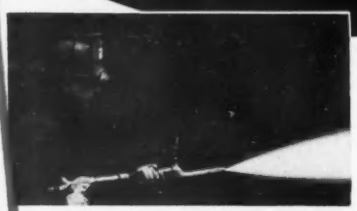
1 **PROTECTIVE SPRAY.** Special spray protects face and shoulders from heat.

2 **ADJUSTING BARREL.** By turning barrel, flow can be changed from a straight "power" stream to a close-up fog for any type of fire.

3 **TRIGGER GRIP.** Gives natural position to arm and grip and is easy to hold. No fatigue.

4 **GUN LOCK.** Stream can be set in any pattern and locked there if desired. Relieves arm muscles.

5 **HOSE SWIVEL.** Eliminates bothersome twisting of hose.



FMC FOG FIRE GUN IN ACTION! *Fireman at left is holding trigger release with his right hand and adjusting barrel with his left hand. By turning the barrel slightly, he can change the flow from a straight stream to a wide fog pattern, and can get close to fires to do effective work.*

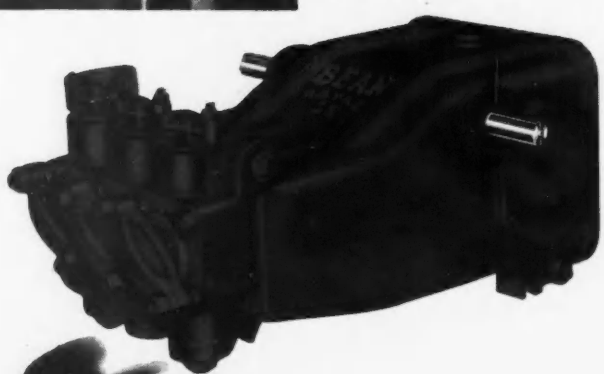
A ONE-MAN JOB! *With pressure on, the FMC Fog Fire Fighter gun practically carries itself and can be poked into cellars, attics or holes in partitions. If the fire is intensely hot, it is possible to use the protecting spray nozzle to protect your face from the heat and work right up to effective distance from the fire.*

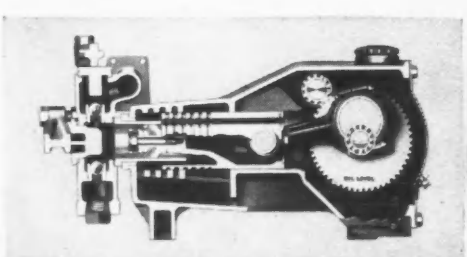
FMC HIGH PRESSURE PUMP

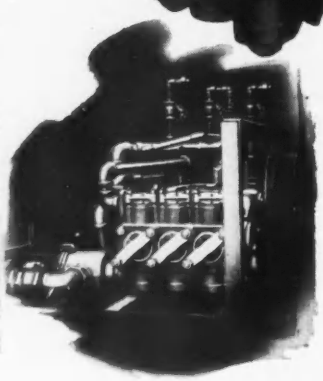
Built only by Bean

This is the pump that is revolutionizing fire-fighting technique.

Note how sturdy and compact it is — how simple, yet modern in design! The cylinders are porcelain-lined; the gears are helical cut, and there are latest type heavy duty bearings on the eccentric shaft and countershaft. Both the ball valves and their threadless and gasketless tapered seats are of stainless steel. And all working parts are bathed in oil. It has many other proven endurance features.







800 lbs. AT THE PUMP!

That's a pretty tough job for any unit. But — the FMC High-Pressure Pump easily maintains that pressure, without overworking. The reason? It is a 3 cylinder, positive displacement horizontal and compact pump designed for even higher pressures by F.M.C. High-Pressure Pump engineers.

BUILDERS OF BEAN HIGH-PRESSURE

FMC HIGH-PRESSURE SYSTEM FOR FIGHTING FIRE WITH FOG

THE MODERN WAY OF FIGHTING FIRE

Don't confuse the results obtainable from FMC High-Pressure Fog Fire Fighting with any other system. There's nothing else like it for speed, for efficiency, for all-type fire protection.

This FMC High-Pressure System — originated by the John Bean Mfg. Co.—has revolutionized fire fighting technique.

IT'S THE PRESSURE THAT COUNTS!

In fighting fire with fog—you must have high pressure to get maximum benefits. And that's what you get with the FMC Fog Fire Fighter.

The FMC High-Pressure Pump easily delivers and maintains *800 lbs. pump pressure*—better than *600 lbs. nozzle pressure.*

A LITTLE WATER GOES A LONG WAY!

The high pressure gives you a combination of high velocity and finely-atomized water—just what you need to *blast—cool* and *smother* flame. Every droplet of water is broken up into thousands of tiny particles that can be *"blasted"* into the source of the fire.

One gallon of this finely-atomized fog—properly used—has the fire-quenching possibilities of many times that of low-pressure water.

BY ALL MEANS—GET THE FACTS!

Investigate! FMC High-Pressure Fog is the greatest contribution ever made to fire fighting. It has proved its worth at hundreds of town, rural and airport fires.

Right now—the Armed Forces are taking most of the production of FMC High-Pressure Fog Fire Fighters but—you should be ready to modernize the moment civilian needs can be met. Start planning—now!

ONLY THE FMC HIGH-PRESSURE FOG FIRE FIGHTER PACKS THE NEEDED PUNCH TO PRODUCE AND MAINTAIN 800 LBS. PUMP PRESSURE—600 LBS. NOZZLE PRESSURE. THE REASON? THE PUMP—BUILT BY BEAN—WAS DESIGNED FOR HIGHER PRESSURES BY F. M. C. HIGH-PRESSURE PUMP ENGINEERS.

STANDARD FMC FOG FIRE FIGHTER. *A self-contained fire-fighting unit. Carries its own water supply and complete fire-fighting equipment. Provides two guns of 30 gallons each at 600 lbs. nozzle pressure. Quickest possible action on arrival.*

FMC *Original* HIGH-PRESSURE FOG FIRE FIGHTER

CAN BE MOUNTED ON MOST STANDARD TRUCK CHASSIS

FOOD MACHINERY CORPORATION

JOHN BEAN MFG. CO. 726 HAZEL ST., LANSING 4, MICH. : BEAN-CUTLER DIVISION, 426 JULIAN ST., SAN JOSE, CALIF.

PUMPS FOR OVER SIXTY YEARS

Fyr-Fyter equipment has proven its value in preventing small fires from becoming disastrous through the loss of life and property. Recent catastrophic fires with terrific loss of life emphasize the urgent need of fire protection. A Fyr-Fyter Instant will usually check most any fire if used immediately.

HELP SAVE LIVES AND PROPERTY

Get Fyr-Fyters for safety's sake. We advise and serve war production plants, public institutions, etc. immediately. Write us today regarding Fyr-Fyter equipment for your own protection.

THE FYR-FYTER CO.
Dept. 20
DAYTON 1, OHIO

ARMY (E) NAVY
WAR BONDS

Fyr-Fyter

"Half-Mile-Ray"

Portable Emergency Lights

STORAGE Battery and Dry Cell Outfits for all types of service. Also Spotlights for cab mounting on vehicles.

Send for Catalog "V"

THE PORTABLE LIGHT CO., INC.
216 William St., New York 7, N. Y.

Should Firemen Make Electrical Inspections?

(*Continued from Page 13*)

receiving good care? And, incidentally, it can do no harm to innocently ask a leading question such as, "When did this motor last burn out?"

Now the fireman will consider what would be the probable result of any or all of our three causes of electrical fires — arcing, sparking or overheating at this particular machine.

Obviously, if the motor is in a clean location and the surroundings are relatively incombustible, not much is going to happen even if the motor burns out. On the other hand, if the motor is in an explosive atmosphere, and it is not of the explosion proof type, an explosion is likely to be caused by even a small spark and is practically certain to follow arcing or a burnout. Bewteen those two sets of circumstances there is a wide range of possibilities.

Now that he has checked up on all those factors, all of which was merely a matter of observation, what is the fireman going to do about it? Assuming the type of motor cannot be changed, there are three opportunities for improvement: (1) He may recommend that the location of the motor be changed; (2) He may recommend that the environment be changed, or (3) that the care of the motor be improved. Specifically what he suggests will depend on circumstances.

A similar procedure may be followed with each piece of equipment, keeping in mind the three possible sources of fire, arcing, sparking or heating. Switch cabinets should be kept closed so that sparks generated therein can not fly about. They should be kept free of dust which might be ignited by an arc or a spark. Examination should be made of blades, terminals and fuse holders for possible loose connections which may heat.

Devices which normally produce sparks should be used only in suitable environment or should be so enclosed as to eliminate the spark hazard.

Devices producing heat by means of exposed elements should not be used in locations where explosive vapors or dusts, or combustible flyings are present. Furthermore, such devices should be so installed that the direct radiation from them may not overheat ordinary combustibles in their vicinity.

Wiring subject to mechanical injury should be closely examined for abrasions, that is particularly important in respect to portable cords used with trouble lights and portable tools. Also the fireman will not overlook the possibilities of the trouble lights and the tools themselves which are likely to be used in any part of the premises. Are they of such nature that they should not be used in any particular location? This is a seemingly small matter that causes lots of serious fires and accidents. And while on this subject of portable cords, the fireman will recognize many types of cords that are being used in ways for which they are unsuited, and will be able to recommend a type that is approved for that particular purpose. Unfortunately not all inspectors, firemen and otherwise, clearly understand that all of the some 32 kinds of approved cords are approved for specific purposes only, and not for general use. Care should be exercised not to condemn a particular cord as unapproved when actually it is the *use* of that particular type of cord that is subject to criticism.

THE fireman will recognize that light bulbs subject to mechanical injury should be suitably protected with wire guards. (Of course bulbs subject to combustible dust or explosive vapors should be in vapor proof or dust tight enclosures but the chances of securing such fittings at present are very remote.) And he will not overlook the fact that a bulb as small as 50 watts will generate enough heat to char dust that has accumulated on its surface.

There is the matter of checking fuses or other overload protective devices. There is a tendency not only among firemen but among other inspectors as well, upon finding an oversize or a plugged fuse or other device, merely to make a recommendation to replace with a fuse or overload element of proper capacity. Such recommendation should be supplemented by some direction such as this: ". . . and if such fuses (or elements) fail to carry the load, an electrician should be engaged to determine the cause of the overload and take proper corrective measures." If the circuit is overloaded, as blowing of fuses might indicate, nothing is to be gained by merely replacing fuses.

FOR years, those interested in better and safer electrical installations have concentrated on perfection of the National Electrical Code. The Code today is a wonderful piece of work, representing the essence of the best thought in the electrical field in matters of electrical safety. But it is an installation Code and electrical inspectors have lately come to a realization that, good as it is, the National Electrical Code, even with the potent assistance of the List of Inspected Electrical Materials, published by Underwriters' Laboratories, is not doing the job that must be done if there are to be fewer, rather than more, fires of electrical origin. It is now recognized that until proper maintenance is the rule rather than the exception, electrical fires will continue to increase rather than decrease. It was largely with that thought that this article ventured to assert that firemen can reduce by 50 per cent the potential electrical fires that otherwise will occur in the risks that they inspect.

A non-technical, superficial inspection of electrical equipment as can be done by intelligent firemen, and carried to a conscientious conclusion, can be productive of tremendously beneficial results.

•

CHIEF F. B. McDOWELL of Brookfield, Illinois (member of Volunteer Firemen's Section), reports that he succeeded his father as chief in 1942, a post held by the latter for thirty years. Chief McDowell would be interested in knowing if there is a similar case of a son succeeding his father in the same rank.

The Cost of a
DELAYED ALARM

The spread of flames is accelerated by a Delayed Alarm — the attendant costs involve interruption of business and income — and frequently human life.

More than 1,000 communities with volunteer fire departments are now protected by Gamewell Fire Alarm Systems. A few boxes, properly distributed, will materially strengthen the fire defenses.

The Diaphone horn with coded signals saves time by directing the firemen to the scene of fire — or the boxes may be arranged to operate your existing public alarm.

DIAPHONE HORN
Operated by
Compressed Air
The Circuit is
shown connected
with the Electric
Control Valve.

Include In Your Post-War Plans
An Adequate
FIRE ALARM SYSTEM

We invite your inquiries

GAMEWELL FIRE ALARM BOXES
Connected In Series
In Closed Metallic Circuit

110 VOLT A.C.

GAMEWELL CONTROL UNIT
VITAGUARD SYSTEM

With Self-Winding Register — Manual Transmitter for Sounding Alarms Received By Telephone — Control Switches — Test Switches and Instruments — Batteries, Rectifiers and Line Terminals Mounted Within the Cabinet.

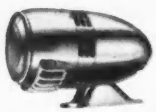
THE GAMEWELL COMPANY
Newton Upper Falls, Massachusetts

Photo courtesy Goodwill Fire Company No. 1, Reading, Pa.

ANOTHER INSTANCE OF *Good Judgment*

When you see a FEDERAL Siren on fire apparatus you can be assured that "good judgment" put it there. You also can be assured it is a siren that is ruggedly yet finely designed and constructed —that it has a powerful and distinctive tone roar, and that it will give long unfailing service with minimum attention.

Investigate the FEDERAL line of sirens. There are many models from which to make a selection. Some are equipped with a flashing red light, others with an oscillating light.



A deep tone, long roll siren with flashing red light.

ARMY E NAVY

WRITE FOR BULLETINS

FEDERAL ELECTRIC CO., INC.

SIREN HEADQUARTERS

8717 So. State Street — Chicago 19, Illinois

Midwestern Combination Suit

Rubber or Canvas

Standard in many Municipal Dept's

All Over America

You can buy either the coat or the pants separately or together. The coat is a highly serviceable garment as a result of rugged and superior quality throughout. Flexible elastic inner sleeve for wrist. Adjustable collar strap, detachable wool lining, Midwestern safety snaps, 2 outside pockets, 6-inch storm flap, and many other good features.

Bunker Pants

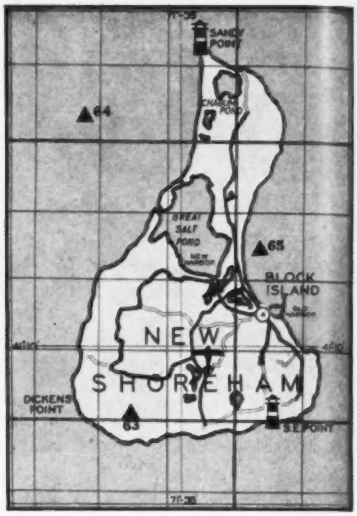
- Lining held by snap buttons
- Eight suspender buttons
- Safety snap on belt
- Wool Lining
- Reinforced adjustable belt
- Wide protecting flap
- Reinforced by rivets

Regular Fireman's Boots Available ¾ length, reinforced instep, felt linings. New synthetic rubber, not reclaimed. Write.

See your local Midwestern distributor for prices and literature, or write the factory.

MIDWESTERN MANUFACTURING CO.

MACKINAW, ILLINOIS



Block Island, from Rhode Island Department of Agriculture and Conservation map.

"Another Country Heard From"

ONE of the many activities of the N.F.P.A. is the exchange of information between fire departments. When an individual has an idea, a workable and proven idea, and exchanges it with his neighbor, then each of them has two good ideas. Oftentimes very worthwhile information is possessed within some isolated department and not passed on. This, perhaps, is well brought out by a letter received from Joseph Pennington, Block Island Volunteer Fire Company, and treasurer of the Island Light & Power Company.

(Readers of VOLUNTEER FIREMEN outside New England may not know that Block Island is an interesting and complete world in itself. It lies about ten miles off shore from Rhode Island, to which it belongs politically. In the early days of the colonies, Block Island was "a miniature democracy." During the Revolution, the colonies virtually banished the island, leaving the settlers to defend themselves. They did so well, that in the War of 1812, Block Island declared and maintained a profitable neutrality.)

Even today Block Island is still somewhat isolated and as Mr. Pennington says, "Due to our island location, we in the local volunteer fire company do not have much chance to know what other companies are doing. I like the VOLUNTEER FIREMEN magazine very much and the January issue better than average. I wonder if most readers would not welcome more instruction on how to do even the very simple things. I think most all trade magazines assume too high a degree of 'know how' on the part of their readers.

"Not to be critical, but reading is practically our only source of information. In the pictures of the New Haven fire in the January issue of VOLUNTEER FIREMEN, most all the men are at the ends of the

tank, only one at the side. I was under the impression that in case of tank rupture, the ends were most likely to go first. We have several aboveground storage tanks in this area, and in case of fire it's nice to know the safest point of attack."

Mr. Pennington is quite right about approaching ordinary burning gasoline tanks from the sides rather than from the ends. However, the burning railroad tank cars shown in the January issue of VOLUNTEER FIREMEN are of a somewhat different case, due to their special type of construction, and also because at the time the closeup picture was taken, the fire was virtually out, with little danger remaining from internal pressure. Previous issues of VOLUNTEER FIREMEN have shown serious explosions of petroleum tanks illustrating the dangers of internal pressure explosions as well as boil overs.

•

S. S. Gaspar de Portola

(Continued from page 15)

Army Transportation men, and other business and professional men interested in learning the ABC's of fire fighting.

"One case that provided all of us with a lot of laughs not so long ago concerned an Army officer's explanation of the finer points of what he had learned," the commander recalled.

"The officer went into great detail to tell of all of the scientific ways that he had been taught to use extinguishing oil fires. Then he wound up the talk by telling the officer about how he had finally been taught to beat the oil blaze out with a stick."

"It struck us all pretty funny. Truth of the matter is that we have worked so much with oil that 'beating a blaze out with a stick' is not as ridiculous as it may sound."

Visualizing a setup that has produced more than 10,000 men trained in the fundamentals of fire prevention and protection may prove somewhat difficult, but that is actually what Commander Layman has accomplished with a handful of skilled help. The training program at Fort McHenry is changed continually to incorporate the latest wrinkles in modern fire fighting. As is the case with training of this nature, new ideas must stem from the men running the show.

"There is a lot of hard work ahead before experiments being conducted on the *Gaspar de Portola* are completed, and like a lot of the work we have already done in the fire prevention and protection field, we must start from scratch. But we aim to do a lot more than scratch the surface of this problem before we're through," Commander Layman smiled.

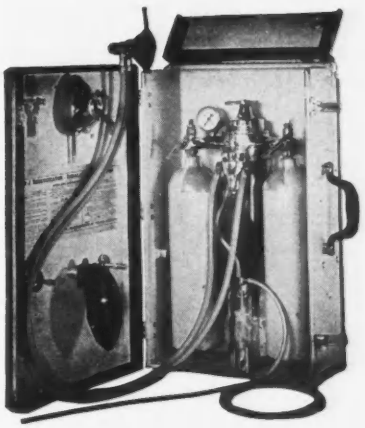
The commander's record is proof aplenty that the statement is no idle boast.

Reprinted through the courtesy of the *International Fire Fighter* magazine where it appeared in the December 1944 issue.

E & J RESUSCITATORS SAVE LIVES THAT NEED SAVING

•

These pioneer automatic breathing machines are especially designed to revive the most critical non-breathing cases. An outstanding clinical record of lives saved is their guarantee of proven merit.



•

SUPERIOR QUALITY THROUGHOUT

When you inspect the interior mechanism of an E & J Resuscitator you will know why they have such a long record of dependable and successful performance in saving lives. This close study of an apparatus upon which so much depends will demonstrate why E & J Resuscitators are the accepted standard of quality, precision workmanship and effectiveness in mechanical artificial respiration.

YOUR RESCUE SERVICE IS NOT COMPLETE WITHOUT MECHANICAL RESUSCITATION—AND THIS MEANS "E & J" IF YOU WANT THE BEST

E & J MANUFACTURING CO.

GLENDALE, CALIFORNIA

Drexel Bldg. Philadelphia — 17 East 42nd St. New York City — 530 Fernando St. Pittsburgh — 581 Boylston St. Boston

2144 No. Springfield Chicago — 3032 W. 25th Ave. Denver — 3900 Grandy Ave. Detroit

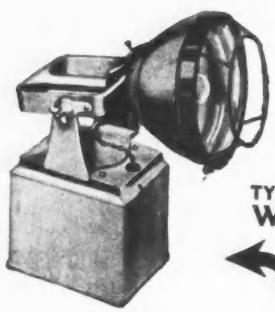
5005 Euclid Ave., Cleveland

Pioneers and Specialists in Mechanical Artificial Respiration

CIRCUL-AIR
FIRE HOSE DRYER
- Is easier to use
- Saves drying time
- Reduces hose stretch
- Prevents mildew and rot
- Improves building design
- Air-conditions as it dries

THE CIRCUL-AIR CORPORATION
6339 East Palmer Avenue
DETROIT 11, MICHIGAN

One of 70



TYPE WS

- RECHARGEABLE BATTERY
- LIGHTEST WEIGHT
- POWERFUL—MILE RANGE
- LONGEST BURNING HOURS
- ALL NIGHT WORK LIGHT OR
- 150,000 C.P. SEARCHLIGHT
- SPARE BATTERY INSERTED IN TWENTY SECONDS

WRITE FOR NEW EMERGENCY LIGHTING BULLETIN No. 144.

CARPENTER MFG. CO.
"MASTER ★ LIGHT ★ MAKERS"
168 SIDNEY ST.,
CAMBRIDGE 39, MASS.

Firemen's Training Report

(*Continued from Page 9*)

NEBRASKA. Chief J. I. Fetters, State Fire Instructor, reports that 40 local fire schools were conducted during the year, giving an average 18-hour course in hose and ladder evolutions, pump operations, ropes and knots, masks, ventilation, and first aid. In addition, a 20 hour course was given at the State Fire School with hose layouts; special fires such as plane crashes, gasoline fires, propane and butane fires; arson investigation; fire service hydraulics; and rescue operations. This Fire School was in the nature of an advanced course. In addition 108 fire departments were reached with an average 8-hour promotional type of short course. A method of carrying out these courses is to conduct local schools in 40 to 50 cities per year, at 10 regional centers one-day schools are held in addition to the 3-day state fire school. An additional full-time fire instructor has been employed by the State Department of Vocational Education.

NEVADA. Mr. Donald C. Cameron, State Supervisor of Trade & Industrial Education, reports that due to war conditions and the great demand for instructors in Army camps, Nevada has lost all available instructors and for the present the state has no itinerant instructor. Training classes have, however, been recently organized within the Reno Fire Department.

NEW HAMPSHIRE. Mr. A. C. Hudson, State Fire Coordinator, reports that while the fire departments of the larger cities and towns have been given regular training by their officers, there has been no statewide firemen's training program conducted during the past year. However, the matter of firemen's training was discussed, at the December meeting of the New Hampshire Fire Chiefs' Club. It was agreed that as soon as travel conditions were improved and the fire service returned to a more normal level, an active state-wide training program would begin. The cooperation of the University at Durham, New Hampshire, has been obtained and has proposed to have a week's fire training program including round-table discussion groups which will develop detailed training plans for the various classes in the fire service. Some excellent success is also being obtained through the Agricultural Department at the University in giving fire protection education to the students. In addition last spring there were regional fire training programs in cooperation with the State Forestry Department. These programs while emphasizing forest fire control contained considerable information for fire department officers and members in the smaller communities.

NEW JERSEY. Battalion Chief W. B. Plasket, President of the New Jersey State Fire School Council, reports that they have ceased training for the duration, owing to the working schedules in war plants and the gasoline and tire shortage. It is planned to reopen the training program as soon as conditions permit. However, there were a number of fire schools conducted under local or county auspices.

NEW MEXICO. The 14th Annual Fire College and 21st Annual Convention of the New Mexico State Firemen's Association were held June 12–14 at Raton, New Mexico. The attendance of 151 firemen from 30 municipal, and 14 Army fire departments was considered very good under wartime conditions.

NEW YORK. The Firemen's Training Program conducted under the New York State War Council gave basic training to 25,000 firemen in more than 100 schools of instruction. Figures for the last fiscal year are not available, because the program was suddenly abolished by Governor Thomas Dewey when the Fire Service of the state objected to its drastic curtailment and transfer without notice or prior consultation, to the Office of the State Director of Civilian Protection. The Legislative Clearing House of the New York Firemen's Association had previously ruled that the New York State Firemen's Training Program should be placed under the State Department of Education, but had been advised by the Legislature to postpone the matter until 1945, because appropriations for the program were available through the State War Council, whereas a special appropriation would have to be made to transfer the program to the Education Department.

Instructors who attended the Memphis Conference last year will remember the interesting demonstrations conducted by Chief Edward Curren, former Chief State Fire Instructor of New York State. Chief Curren is now Chief Engineer of the Underwriters Rating Board in Albany and has as assistants several of the chiefs who served with him in the state training program. The Underwriters Rating Board is now conducting a State Training Program as a public service to the smaller fire departments. The State Firemen's Association Legislative Clearing House has planned to sponsor legislation this year to have an adequate state firemen's training program under the State Department of Education. This same objective is backed by the New York Fire Chiefs' Association.

NORTH CAROLINA. As reported by State Fire Marshal Sherwood Brockwell, the 1944 session of the North Carolina Fire College and Drill School was held in Charlotte, May 23–25. Three hundred and seventy men represented 84 fire departments, and one Army unit registered. Of these, 353 were awarded Fire College certificates and 281 men had participated in all drill periods and were awarded drill certificates. One hundred and forty-six firemen received certificates for advanced training. Twenty-nine firemen received diplomas for having completed 4 full sessions of the Fire College and Drill School. All drills were conducted at the Charlotte drill tower.

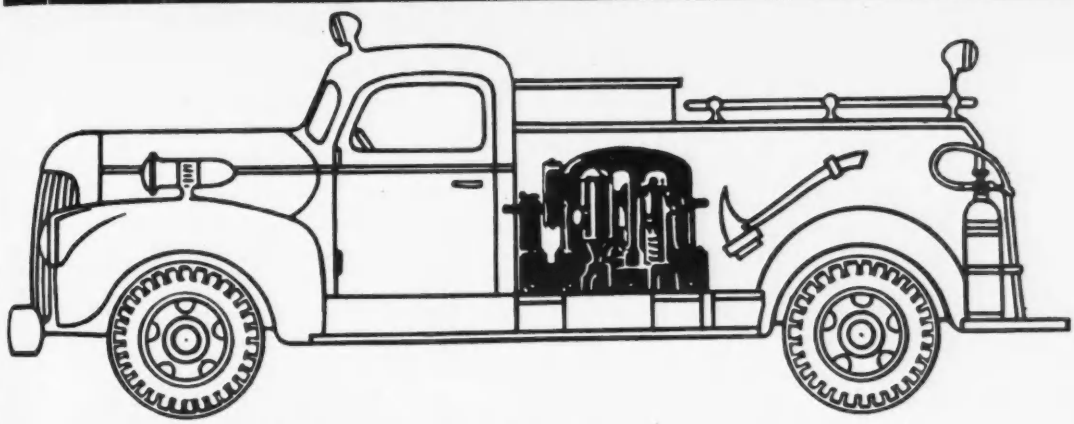
NORTH DAKOTA. Mr. William J. Duvall, Coordinator of Trade and Industrial Education in the North Dakota State School of Science, reports that 5 firemen's training schools were held during the past fiscal year. These schools consisted of 3-hour courses covering such subjects as supervision, ventilation, salvage, inspection, first aid, care of equipment, and air raid protection. The total of 619 men attended the fire schools.

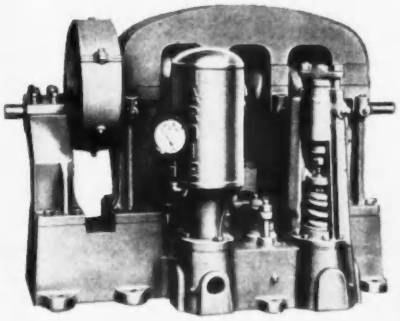
OHIO. Chief Walter T. Banning, Coordinator of Fire Defense Training, reports that 850 firemen and 108 officers received 40-hour training courses which consisted of 20 lessons of 2 hours each, covering all of the fundamentals of fire fighting and complete outdoor evolutions. In addition, 15 officers completed a 16-hour course in teacher training. At the present time, the state's firemen's training manual is being revised, and a separate course is to be prepared for a teacher training program. It is hoped that there will be a State Fire School at Kent State University next year. It is also hoped that one or two more instructors will be employed as present instructors cannot cover the entire state.

OKLAHOMA. George Orgain, Field Instructor for Fire Service Training in Oklahoma, reports that 442 men completed one or more units at the Annual State Fire College. Unit training following the outline of the Educational Committee of the Oklahoma Firemen's Association, included the Introductory Course and Units 1, 2, 3, 4, 5, 8, 9, 10. Unit 7 consisting of the text on Ventilation Practices has just been completed. An officers' training course was given in the new fiscal year starting after June 30. Plans are under way for the expansion of the Oklahoma Firemen's Training program which is already one of the most highly developed in the United States. An officers' training outline is being prepared. The time of the field instructor is completely booked until June 21, 1945, which indicates extensive interest on the part of fire departments in this program. One outstanding feature of the 1944 Oklahoma Fire College program was the practical demonstration of fire service hydraulics. In addition to the various rules and formulas usually taught, the actual results were demonstrated by means of fire streams through hose lines which had pressure gauges inserted at frequent intervals. This has been reported in detail in previous issues of VOLUNTEER FIREMEN magazine.

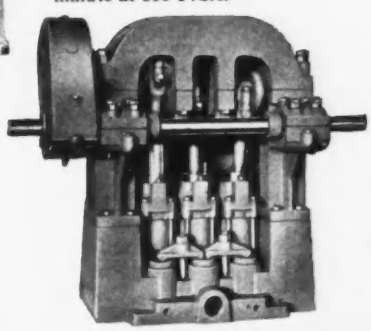
OREGON. In addition to 1070 firemen completing the 40-hour basic course in the fundamentals of fire fighting, 2,867 members of the Army and Navy were given the same instruction. In addition 7 officers completed a 30-hour course on related theory of fire fighting and organized fire drills and fire fighting. There are now 90 firemen and officers in the state who are qualified as instructors. Winston D. Purvine, State Supervisor of Public Service Training, reports that only a few of the smaller cities are included in the present program so that much expansion is needed. However, including auxiliary firemen, a total of nearly 20,000 persons are known to have received training during the past school year.

(*Continued on Page 26*)





● The Hardie is a big, strong vertical crankshaft-driven pump built for sustained high pressure under all conditions of use. At left, the Hardie Imperial LCXA delivering 60 gallons per minute at 800 P.S.I. Below the Hardie Imperial XCXX 35 gallons per minute at 800 P.S.I.



Specify

● The high pressure pump is the most important thing in any fog fire fighter. Hardie pumps are available in the complete fire trucks built by leading manufacturers of fire control equipment. Specify a Hardie pump and Hardie fog gun when you buy a complete new fog fire fighter, or convert an old truck into a fog unit, easily done at small cost.

THE HARDIE MFG. COMPANY

Hudson, Mich., Los Angeles, Calif., Portland, Oregon

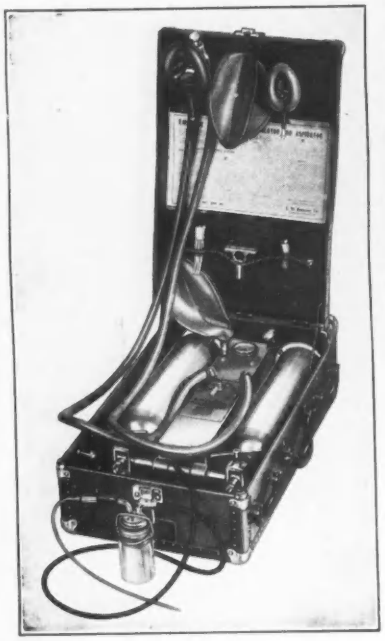
Canadian Distributor CLARENCE W. LEWIS, Grimsby, Ont.

★H★A★R★D★I★E

High Pressure **PUMPS AND FOG GUNS**

for Fog Fire Fighters

When Life is at Stake!



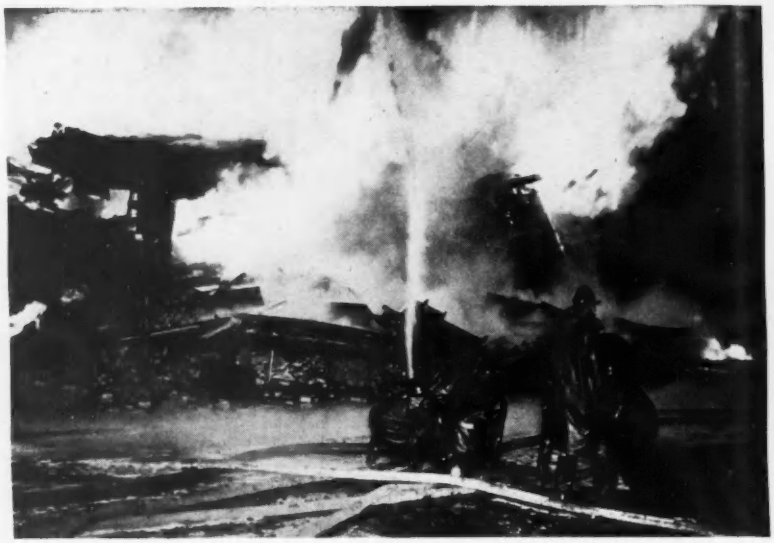
Make sure you have on hand the best life-saving equipment money can buy. It is your best insurance against unnecessary loss of life through smoke suffocation, electric shock, gas poisoning, drowning or asphyxia. Insist on that margin of superiority found in the:

EMERSON RESUSCITATOR

•

Write for literature or an actual demonstration at your headquarters

J. H. EMERSON CO.
24 Cottage Park Ave., Cambridge, Mass.
Representatives in Principal Cities



Acme

Muskegon, Michigan. Firemen direct streams of water on the fire which destroyed eight business establishments and a hotel in a block square area on January 6. Damage was estimated at $500,000, but no deaths were reported. The fire may have been caused by a short circuit in a tavern juke box.

Firemen's Training Report

(Continued from Page 24)

PENNSYLVANIA. Mr. Wayne H. Prather, Principal of the Public Service Institute, has sent us a report on firemen's training prepared by Mr. Arthur Espey, who was Adviser of Fire Service Training before joining the staff of Cardox Corporation. Pennsylvania had one of the most extensive training programs reported for the past fiscal year. The total number of firemen enrolled in the training program was 1,586. Of these 1,210 completed units of the course. There were 56 training classes with an average of 54 hours instruction given to each class. In addition to the Annual Firemen's Training Conference at Lewistown at which 545 men were enrolled, Chester County held a 10-week Fire School at which 72 trainees qualified for certificates. Lancaster County Firemen's Training Institute held a 2-day school and the Western Pennsylvania Firemen's Training Institute held a 5-day school at California, Pennsylvania, with an attendance of 365. The rank and file firemen's training consisted of a 54-hour basic course with 3 refresher courses of 30 hours each given at several locations. Twenty-seven officers completed a 30-hour course.

RHODE ISLAND. While no state-wide firemen's training program has been carried on in this state, extensive work has been done through the activities of the Woonasquatucket Valley Firemen's League, covering the northern end of the state, and through other regional fire service organizations. A training field day has been held during each of the past several years at Wallum Lake, at which the latest developments in rural fire fighting have been demonstrated to members of the fire service from Massachusetts, Connecticut, and Rhode Island. The lake is located partly in Rhode Island and partly in Worcester County, Massachusetts. Several thousand firemen were in attendance at the last meeting which was a joint gathering of the Woonasquatucket Valley Firemen's League and the Blackstone Valley Firemen's Association of Massachusetts and Windham County, Connecticut, firemen. These organizations have done extensive work in developing cooperative fire fighting operations in the tri-state area and not infrequently large amounts of fire equipment from the 3 states are assembled at both forest and building fires in the area. Successful fire fighting relays practiced in advance have been employed to supply streams from rural water sources. Considerable use is being made of converted OCD-type apparatus, and water tank units, water spray nozzles, and other advanced methods. Some equipment has been mounted on reconditioned Army vehicles purchased by the volunteers.

SOUTH CAROLINA. Apparently little or no state-wide firemen's training is being carried out in South Carolina. This state has never been very active in the firemen's training field. However, two South Carolina fire departments were represented at the 1944 session of the North Carolina Fire College and Drill School.

SOUTH DAKOTA. Mr. M. C. Sullivan, Secretary of the State Fire School, reports that the Fire College in June had an attendance of 367 men who received instruction in fire prevention, fire fighting, ventilation, hydraulics, hose streams, and practical evolutions. He reports that there is a new active interest in firemen's training and that the Firemen's Association will sponsor a new firemen's training school at Brookings next June.

TENNESSEE. Mr. W. A. Seeley, State Supervisor of Trade and Industrial Education, reports that considerable progress has been made in developing the firemen's training in Tennessee. A full-time instructor was active the last half of the fiscal year covered in the report. Experience indicates an extensive desire and need for further firemen's training work. Plans were developed for the first State Fire School which was held October 23–27, 1944. It is planned to train local instructors for the work of carrying on in local training classes.

TEXAS. Prof. C. C. Hedges, Acting Director of the Firemen's Training School, reported that 396 men from 274 towns completed a 40-hour training course with 70 of the students from Army camps. An interesting fact is that two thirds of the entire enrollment were firemen who had never been to a fire school. Fifty-two firemen completed a 40-hour teacher training course. The State Fire Instructor gave an average of 4 hours training to 4,189 men attending local classes. Last October Col. H. R. Brayton resumed the directorship of the Texas Firemen's Training School.

UTAH. District Chief Engineer H. S. Morr, of the Board of Fire Underwriters of the Pacific, reports that while no state-wide training had been conducted through the past fiscal year, plans are under way for much more comprehensive training work. Following a survey by the National Board of Fire Underwriters, two of the largest fire departments, Ogden and Salt Lake City, have been reorganized. Salt Lake City is conducting an intensive drill program with a large amount of training equipment being prepared. It is believed that a regional school

(Continued on Page 28)

How Soon

WILL YOUR APPARATUS GET THERE?

Just as surely as you get more than twice the water through a 4 inch hose as is possible through a 2 inch hose—so do you double your certainty of getting to the fire quicker and safer with four-wheel-drive apparatus—for with the FWD—all four wheels are alive with power and grip the road for the run—and slippery roads and bad grades, impassable to ordinary vehicles—are safely negotiated with FWD's . . . the two driving axles of the FWD, delivering powered traction to front as well as rear wheels, give you double protection in safety and dependability—protect the lives of firemen and users of the street—FWD is doubly sure of getting to the fire. Its increased traction and positive control save minutes that count. Cities from coast-to-coast look to FWD apparatus for this extra safety and performance. Available in a complete line of fire trucks with rotary or centrifugal pumpers in triple or quadruple combination, aerials, etc. Write for literature.

THE FOUR WHEEL DRIVE AUTO COMPANY

Canadian Factory: Kitchener, Ontario

CLINTONVILLE **WISCONSIN**

FWD

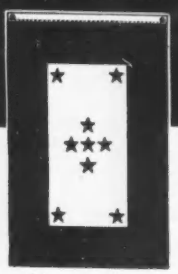
FOUR WHEEL DRIVE

FIRE APPARATUS

***Built By the Oldest and Largest Four-Wheel-Drive Truck Manufacturer**

FWD Model KSU 750-gallon triple combination pumper recently purchased by Salt Lake City, Utah. The new unit, equipped with five-man cab, is built on a 180-inch wheel-base and is powered by a 204-horsepower engine. Other equipment includes a 100-gallon booster tank and two aluminum ladders, 14 and 24 feet in length. The hose body has a capacity of 1200 feet of 2½ inch hose.

HONOR YOUR SERVICE MEN



Honor your fellow-firemen now serving with the armed forces, by displaying this official

SERVICE FLAG

Blue stars, white panel, field of red. Send for catalogue.

One star for each one in service. Available in any size or material desired. Send for Free illustrated catalogue and price list today.

Permanent

ROLL of HONOR

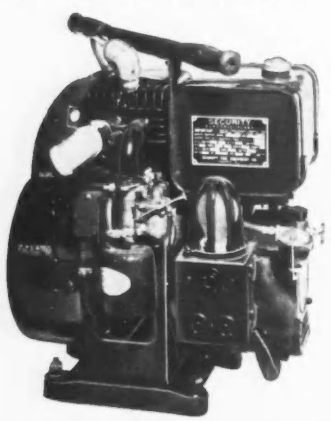
A permanent plaque, with individual names in silver on gold-bordered permanent name plates. Beautiful walnut plaque with eagle and victory torches. Write for price list today.

U. S. and Allied Flags in all sizes. Write for prices.

REGALIA MFG. CO.

Dept. 82, Rock Island, Ill.

PORTABLE FLOODLIGHTING GENERATING PLANT



This 1500 watt portable generator, with 25% reserve, especially designed for fire department service. Lightweight, rugged and compact. Air-cooled 4-cycle engine 2¾" bore x 2¾" stroke. Quick starting. Fully guaranteed, thoroughly dependable.

Also from 600 to 2500 Watts in A.C. and D.C.

Write for Catalog

SECURITY FIRE EQUIPMENT CO.

1550 Princeton Ave. Trenton, N. J.

Firemen's Training Report

(Continued from Page 26)

can be given to all parts of the state about June, 1945. It is hoped that this will eventually develop into a State Fire School. A request has been made for state funds for this purpose. Representatives of six Utah Fire Departments attended an instructor's school given at Denver for the purpose of improving training techniques. The State Firemen's Association will cooperate with the proposed regional school. It is planned to have qualified instructors who will travel through the state and conduct local schools. In addition there have been comprehensive training programs carried out in the ten military estal lishments located in the state. It is hoped that all of the local men at these posts will return to their own departments after the war and bring back added interest in training.

VERMONT. There is no known state-wide firemen's training program in Vermont. Training, if any, is left to each fire chief or community.

VIRGINIA. Mr. Harold I. Baumes, in charge of Public Service Training, reports that 400 men from 23 communities completed a 30-hour training course. This was mostly basic training with some advanced instruction. In addition to 3 state itinerant instructors, many local fire department instructors have continued classes for their own men, but records are not available as to attendance at these classes. The enrollment was approximately 800. Immediately after the termination of the war, it is planned to revive the instructors' training classes on a state-wide basis. This will be for refresher classes for regional instructors and itinerant instructors.

WASHINGTON. Chief W. A. Groce, Secretary of the Washington State Firemen's Association and the Washington State Association of Fire Chiefs, reports that 4,315 men were enrolled in a 4-hour basic and advanced training course during the past school year. In addition, 283 men completed a 20-hour advanced course at the State Fire School, and 5,400 men from 150 fire departments received 4 hours of instruction in the promotional type of course. It is the belief of the cooperating organizations that the present program is insufficient and requests have been made for additional funds from the Legislature now in session.

Deputy State Fire Marshal L. L. Burgunder reports that under the direction of William A. Sullivan, State Insurance Commissioner and Ex-Officio State Fire Marshal, the Fire Marshal's officer has been sponsoring a training program for all people living in rural areas in fire prevention and fire control. This program has been carried on for the past two years with special emphasis on the prevention and control of grain fires, because of the importance of food to the war effort. In 1942, 190 grain fires caused $441,490 of damage. In 1943 grain fire losses totaled $35,178.54 from 34 fires. The year 1944 was the driest in this section for 30 years but the losses rose only to $164,025. The shortage of experienced farm labor has had a great deal to do with the increased loss last year. The Insurance Department has been sponsoring the work of rural fire departments in some 60 departments operating in the state, with 25 or more being organized. Fire service instructors of the Insurance Department are instructing the smaller fire departments of the state.

WEST VIRGINIA. Mr. J. R. Mercer, University of West Virginia, reports that 288 firemen participated in firemen's training classes held for local departments. These classes included both basic and advanced courses. The 14th Annual Fire School was held at Morgantown, June 24–27.

WISCONSIN. Mr. E. L. Neff, Fire Instructor with the Wisconsin Vocational Schools, reports that 526 men participated in an organized 50-hour basic and advanced training course, and that 33 officers took a 30-hour training course. In addition from April 1942 to November 1944, 1,152 men from 38 departments received the 50-hour training course of instruction. It is reported that local fire departments are taking considerable interest in helping the development of industrial fire training programs. The Wisconsin Fire Training Program is carried on through the Vocational Schools. The training program was started with regional fire schools, but it was found that local schools for each community are more desirable and the program has since been conducted on this basis. Part-time instructors taken from the paid fire service of the state have been used to meet the demand for more instructors. The 12 unit program includes the following subjects: ladders, hose, forcible entry, extinguishers, ropes and knots, salvage, hydraulics, chemistry of fire, rescues, ventilation, first aid, pump operation. To date the program has trained 800 volunteer firemen and 252 paid firemen, as well as 15 department instructors, and 35 paid officers. Plans are being considered to develop a State Manual that will standardize procedures. The training program appears to be in a very healthy condition with all firemen taking a great deal of interest in the work.

WYOMING. Sam Hitchcock, State Director for Vocational Education reports a very successful firemen's training program for the past year. Two 30-hour courses were given with training centers operating from the county seats as the program was on a county basis. One course consisting of fire department practices, fire fighting instruction, fire prevention and fire suppression was completed by 407 men. The other course completed by no less than 5,729 persons was a course in forest fire fighting. The training program had the cooperation of the Forestry Service and civilian-defense organizations in addition to the fire service. Unfortunately, before the program was completed the instructors were recalled for other duties but it is hoped that the entire state may be covered during the next year.

Drawing by Boersig

Lt. Harry "Magnesium" Wolff put on a hot show at the FDIC meeting in Memphis.

WHAT'S BURNING

National Foam quickly and efficiently extinguishes these hazardous fires.

For many years, National Foam has been acknowledged by large oil refineries and, more recently, by the U. S. Navy as the effectual fire extinguisher to combat serious oil, gasoline and similar perilous fires.

National Foam quickly produces a thick airtight blanket of tiny cohesive bubbles, shutting out the oxygen supply and extinguishing the fire. The foam is not dissipated by drafts or wind, but remains intact to prevent flashbacks.

National Aer-O-Foam and Equipment are now available in limited quantities for civilian industry. Experienced engineers will be glad to make recommendations indicating type of Foam and Equipment best suited to your individual needs.

IN FIRE DEPARTMENT SERVICE

National Foam System has equipment especially designed for use of Fire Departments to meet all types of foam fire-fighting requirements.

BACK THE ATTACK—*BUY WAR BONDS*

In the recent Marshall Island raid, the Carrier Enterprise was hit by a Jap bomb firing both flight and hangar decks. Hightest gasoline blazed furiously. The ship's fire-fighting crew went into action with National Foam—in One Minute the fire was out.

NATIONAL FOAM SYSTEM, INC.

Specializing in Foam Fire Protection

Packard Building, Philadelphia 2, Pa.

When smoke and gases fill the confined spaces your firefighters must enter in the course of duty, be sure the dependable protection of this standard Apparatus is at hand! Vital oxygen is supplied to the wearer for a full hour's time, even under strenuous exertion and heavy breathing. The M.S.A. One-Hour Oxygen Breathing Apparatus is light in weight, compact, completely reliable—in regular use by modern Departments throughout the country. Write for Bulletin BM-6.

MINE SAFETY APPLIANCES COMPANY
BRADDOCK, THOMAS AND MEADE STREETS
PITTSBURGH 8, PA.

N. F. P. A. Volunteer Firemen's Section
MEMBERSHIP REPORT

MEMBERSHIP PLAN

Through the Volunteer Firemen's Section, fire companies may become members of the National Fire Protection Association. As a member fire company, the department receives at headquarters a set of all regular N.F.P.A. publications. This includes the Quarterly, the monthly News Letter, posters and bulletins.

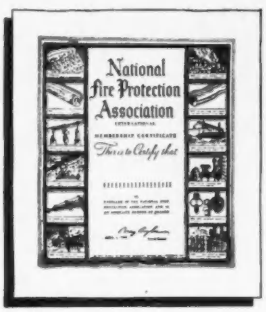
Each member fire company has the Volunteer Firemen magazine sent to the homes of ten men at no extra charge beyond the ten dollars annual dues paid by all associate members of the N.F.P.A. All other N.F.P.A. members pay ten dollars without the ten copies of Volunteer Firemen.

If more than ten firemen want to receive Volunteer Firemen, an additional dollar should be sent for each extra fireman listed to receive the magazine. Individual subscriptions are not accepted from departments not members of the N.F.P.A.

THE membership of your VOLUNTEER FIREMEN'S SECTION continues to grow from month to month as members in many parts of the United States and Canada extend invitations to neighboring fire companies to join the N.F.P.A. or ask that the executive office send application blanks to interested fire departments.

The Section now stands at 1,118 fire departments and fire brigades. Twenty-six new member organizations have enrolled a total of 284 men to receive VOLUNTEER FIREMEN. The new members are listed below:

Rodeo Fire Department, Rodeo, Calif.
East Peoria Fire Company, East Peoria, Ill.
Galena Fire Department, Galena, Ill.
Speedway Fire Dept., Indianapolis, Ind.
Breda Fire Department, Breda, Iowa
Bossier City Fire Department, Bossier City, La.
Volunteer Fireman's Association of Church Point, Church Point, La.
West Cumberland Fire Department, Cumberland Centre, Maine
Elkridge Volunteer Fire Department, Elkridge, Md.
Caruthersville Fire Department, Caruthersville, Mo.
Wanaque Borough Volunteer Fire Company No. 1, Midvale, N. J.
Clayton Volunteer Fire Department, Clayton, N. M.
City of Clovis Fire Dept., Clovis, N. M.
Old Forge Fire Dept., Old Forge, N. Y.
Bascom Community Fire Department, Bascom, Ohio
The Reliance Fire Company No. 5, Chillicothe, Ohio
Alva Fire Department, Alva, Okla.
Armagh Borough-East Wheatfield Twp., Volunteer Fire Company, Armagh, Pa.
Center Square Fire Company, Center Square, Pa.
Monsanto Chemical Co., Marshall, Texas
Orange Fire Department, Orange, Texas
Richmond Volunteer Fire Department, Richmond, Texas
Gulf Coast Firemen's Association, Texas City Heights, Texas
Bedford Fire Department, Bedford, Va.
Neepawa Fire Brigade, Neepawa, Manitoba, Canada
Volunteer Fire Brigade, Sioux Lookout, Ontario, Canada



Membership Certificate, illustrating the history of fire protection

General Clark Hotel, Chicago, Holocaust Cost Fourteen Lives

ONE minute after midnight on January 16th, a passing pedestrian discovered a serious fire in this six-story, brick-joisted hotel. The blaze, starting in an unsprinklered hotel storage room on the first floor, swept up open stair and light shafts, trapping many of the occupants. Twelve men and two women lost their lives from burns, suffocation, or from jumping to escape the flames. According to Chief Fire Marshal Anthony J. Mullaney, of Chicago, no one in the hotel was alert at the time of the fire, no one in the hotel organization called the fire department, and the hotel

International

was without a local fire alarm system to warn the occupants. The fire department, on arrival, rescued 23 occupants and brought the fire under control with 28 powerful hose streams, but they were not called soon enough to prevent this tragedy Property loss was limited to $25,000.

America's FIRST Dual Service Pumper!

HIGH PRESSURE FOG at 1000 lbs. or 800 Gallons per Minute

Front Mount Champion for High Pressure Fog

Type J100 Two Stage Centrifugal

30 Gal. Per Min. at 1,000 lbs.
60 Gal. Per Min. at 880 lbs.
140 Gal. Per Min. at 600 lbs.
300 Gal. Per Min. at 150 lbs.

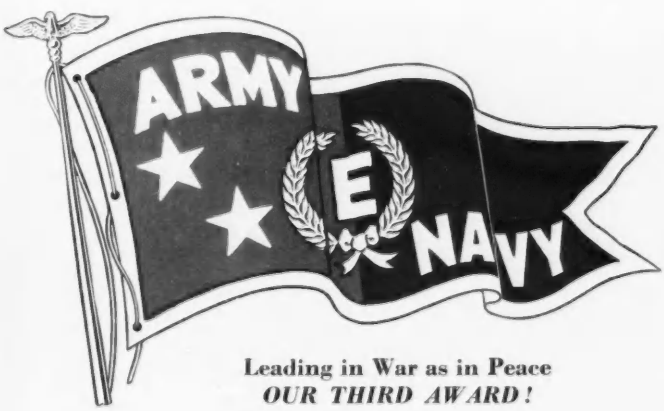
Midship Champion for Heavy Fire Streams

Type M500 Midship Centrifugal

Underwriter Rated 500 GPM
Actually delivers 600 GPM from suction and 800 GPM from fair hydrants

Write TODAY for Complete Engineering Specifications

AT YOUR SERVICE! CONSULT US ABOUT PRIORITIES



Leading in War as in Peace
OUR THIRD AWARD!

New 100 Page Catalog OF FIRE EQUIPMENT

FIRE TRUCKS — HIGH PRESSURE FOG PUMPS — STANDARD FIRE PUMPS — SKID PUMPERS — PORTABLE PUMPERS.

REQUEST YOUR CATALOG TODAY!

"EVERYTHING FOR FIRE DEPARTMENTS"

W. S. DARLEY & CO. CHICAGO, 12 ILLINOIS

MANUFACTURERS' ANNOUNCEMENTS

Glass Fabrics Mean Decorative Beauty Plus Fire Safety

WHAT seems to be the answer to a public safety official's prayer is the beautiful array of non-combustible fabrics now being woven from Fiberglas. These products of Thortel Fireproof Fabrics of New York are suitable for curtains, draperies, ceiling and wall coverings in all places of public assembly, including theatres, night clubs, hotels and schools. They are listed by Underwriters Laboratories as "non-combustible fabrics," and the lab report states that "these fabrics do not burn or propagate flame." It is also important to know that they are available in several weights, a variety of woven and printed patterns, and a wide range of colors. Their visual appeal is no less than their fire safety appeal. The manufacturer assures us that their cost is little, if any, greater than that of other quality decorators' materials. These fabrics have economical advantages in that they are not affected by climatic changes, do not soil as easily as usual fabrics and do not shrink when laundered or dry cleansed.

They are mildew-proof and are not attacked by moths or other natural fiber-eating insects. In weight, the materials compare with damask or heavy satin and despite their humble relative, glass, of which they are made, they fall into folds or crush easily but do not retain wrinkles.

The fire and life hazards of combustible decorations in places of public assembly are too well known to bear elaboration here, but there is now no reason why an auditorium or night club must be beautiful but dangerous, or starkly plain but safe. Beauty and safety may be accomplished at once. For full information, write: Thortel Fireproof Fabrics, 101 Park Avenue, New York, N. Y.

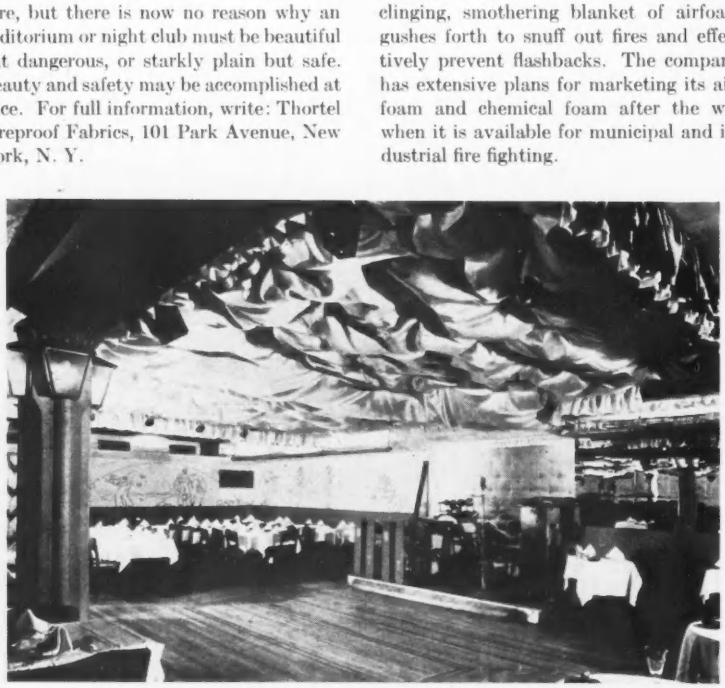
New Line of Fire Helmets by Cairns

FLINT-FLEX is the name of a new line of fire helmets manufactured by Cairns & Brother. The manufacturer states that it is a composition employing the most advanced plastic technology and was developed for this special purpose having hardness to deflect blows even from sharp-edged materials, but with flexibility and temper which prevents cracking. It is a hard, fracture-resisting material, a non-conductor of heat and electricity and is unaffected by water or chemicals ordinarily encountered at fires. The inside fittings afford comfort and security by means of a new adaptation of the famous Cairns Cushion Lining, still made easily removable for cleaning or renewal. Write to the manufacturer at 444 Lafayette St., New York 3, N. Y., for complete details. Ask for Bulletin No. 720.

●

4,000,000 Gallons of "Aerofoam"

NATIONAL FOAM SYSTEM, Inc., of Philadelphia, has just produced its four millionth gallon of "Aerofoam" liquid for extinguishing fire, with 98 per cent of it having gone direct to the armed forces. The U. S. Navy, for which approximately 90 per cent of the fire fighting foam was produced, calls the liquid "bean soup." When the liquid is mixed with salt or fresh water and air by means of a special nozzle developed by National Foam, a thick, clinging, smothering blanket of airfoam gushes forth to snuff out fires and effectively prevent flashbacks. The company has extensive plans for marketing its airfoam and chemical foam after the war when it is available for municipal and industrial fire fighting.



Fiberglas fabrics decorate the ceiling of this New York night club.

New Catalog Available

THE General Pacific Corporation, only western manufacturer of Underwriters approved fire extinguishers and safety equipment, has just published a new catalog, called "The Buyer's Encyclopedia." Data is included on alarms and sirens, fire extinguishers, motor fire apparatus, and allied products, as well as safety clothing and equipment, police and first aid equipment, and a variety of items suitable for industrial maintenance. The new publication also incorporates practical information, such as sections on hose threads, nozzles and fire streams, fire hose maintenance, extinguishers, classification of fires, and pertinent facts on ladder use and care. The book is well illustrated, has complete descriptions of each product, and presents convenient price and ordering information. A free copy of this buying guide and reference manual may be obtained from The General Pacific Corporation, Dept. W, 1800 S. Hooper Avenue, Los Angeles 21, California.

FOR SALE

American-La France 500 G.P.M. rotary pumper. 1931 model with 80-gal. booster tank and standard equipment. Now in use. Address replies to P. O. Box 264, Roanoke, Virginia.

INDEX TO ADVERTISERS

	Page
Akron Brass Mfg. Co.	35
American District Telegraph Co.	17
American-LaFrance-Foamite Corp.	2
John Bean Manufacturing Co.	18–19
Cardox Corp.	33
Carpenter Manufacturing Co.	24
The Circul-air Corp.	24
W. S. Darley & Co.	31
E. & J. Manufacturing Co.	23
J. H. Emerson Co.	26
Federal Electric Co., Inc.	22
Four-Wheel Drive Auto Co.	27
The Fyr Fyter Co.	20
The Gamewell Co.	21
General Detroit Corp.	36
The Hardie Manufacturing Co.	25
Walter Kidde & Co., Inc.	4
Midwestern Manufacturing Co.	22
Mine Safety Appliances Co.	30
National Foam System, Inc.	29
Portable Light Co.	20
Regalia Manufacturing Co.	28
Security Fire Equipment Co.	28
D. B. Smith & Co.	3
Ward LaFrance Truck Division	34

When you write to advertisers, please mention VOLUNTEER FIREMEN

Engine quitting, or on fire . . . a leaking tank or ruptured gas line . . . landing gear jammed and a tricky belly landing to be attempted. They all mean trouble, and they can mean a disastrous crash fire . . . that, *in seconds*, becomes a roaring inferno like this test fire at the Cardox proving grounds.

In such emergencies, a Cardox Airport Fire Truck is high on the list of sights welcomed by a pilot as he comes in for a landing. Called "Big Boy" at one field, "Snorting Bull" at another and "Gargantua" at a third, this truck has run up an impressive record at major airfields throughout the country in saving lives and holding equipment damage to a minimum.

Cardox Airport Fire Trucks are engineered for one specific purpose . . . to extinguish crash fires in the shortest possible time so that rescue squads can get personnel off of the plane.

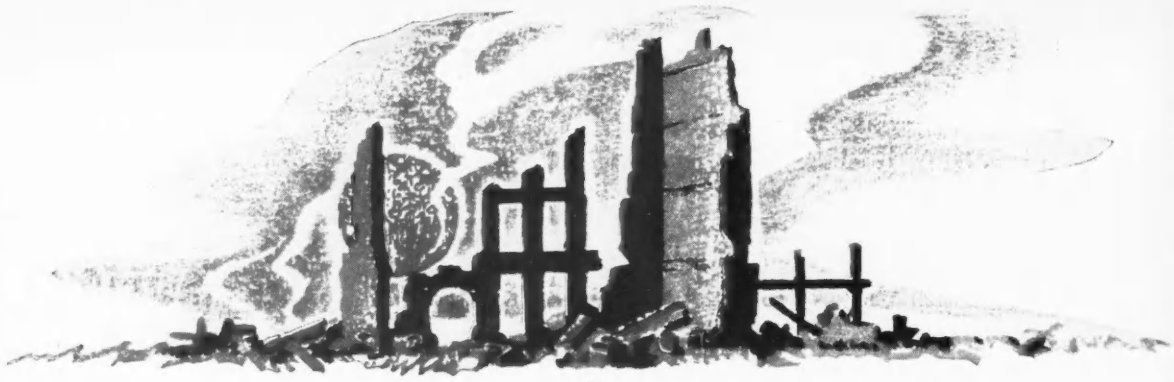
Backed by the tremendous extinguishing capacity of *tons* of zero-cold liquid carbon dioxide and hundreds of gallons of foam solution—teamed up as perhaps the most effective combination yet developed in fighting crash fires—a Cardox Airport Fire Truck literally overwhelms fires. So fast and effective is its performance that rescue of personnel is frequently possible *in seconds* after truck reaches scene of crash . . . even on fires involving hundreds of gallons of running and spilled gasoline.

New Bulletin Gives Full Facts

Airport authorities facing the problem of *adequate* fire protection for post-war operations should get these up-to-the-minute facts on Cardox Airport Fire Trucks NOW! Includes data on design, construction and operation; also typical performance records from the Cardox Case Book. Ask for Bulletin No. 4124

CARDOX CORPORATION
BELL BUILDING • CHICAGO 1, ILLINOIS
District Offices in
New York, Boston, Washington, Detroit, Cleveland, Atlanta, Pittsburgh, San Francisco, Los Angeles, Seattle

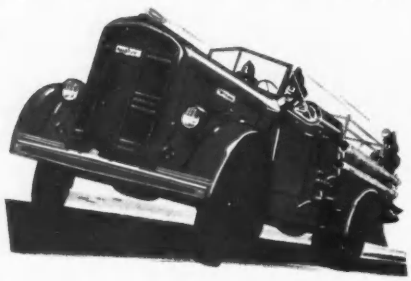
CARDOX
CO_2 FIRE EXTINGUISHING SYSTEMS



FIRE HAS NO PATIENCE

The precious seconds lost by balky, sluggish, or unwieldy motorized apparatus are all a brisk blaze may need to grow into the kind of inferno that can't be stopped • Twenty-five years and more of specialized engineering give Ward LaFrance pumpers unbeatable reliability...ability to save seconds from the time the alarm bell starts, to the moment a full stream goes to work on the fire.

Many engineering factors combine to give Ward LaFrance pumpers this split-second ability . . . full powered engines, correct gear ratios, short turning radius, quick accessibility of hose and equipment, adequate booster tank capacity, quick hose hook-up, are just a few • There is a Ward LaFrance Triple or Quadruple combination pumper that will fit your community's needs exactly.* For complete information and engineering advice, write our Sales Department today.



*Some models not available until after Victory because of W.P.B. limitation orders.

WARD LAFRANCE

TRUCK DIVISION

GREAT AMERICAN INDUSTRIES, INC.

ELMIRA, NEW YORK

AKRON REVOLVING CELLAR NOZZLE

★ A necessity for efficiently fighting cellar fires. The revolving barrel has machined orifices set at different angles and throwing different size streams. Operates on large ball bearings set in non-corrosive metal retainers.

Illustration shows Style No. 535, with ⅜" diameter, 3 center row orifices and 6 others set at angles. Butt end threaded for 2½" hose. Rocker or pin lugs. Overall length 5⅝".

Also made in Style No. 536, with ¼" diameter, 3 center row orifices and 3 others at angles. Base threaded for 1½" hose. Overall length 8½".

Finish — polished bronze.

AKRON BRASS MFG. CO., INC.
WOOSTER, OHIO

AKRON BRASS
FIRE FIGHTING EQUIPMENT

Alaskan

PUMP TYPE EXTINGUISHER

DROWNS FIRE

Approved for Class A* fires — protects 2,500 square feet of floor space. Double acting pump — equipped with patented Safety Phlare — throws a steady stream of water up to 45 feet. Alaskan Pump Type Extinguisher operates perfectly in temperatures as low as 45° below zero when used with anti-freeze charge.

WHERE TO USE ALASKAN

"Underwriters" approved for Class A fires on wood, textiles, paper, rubbish, and similar materials.

Hold extinguisher five feet from base of fire. Direct stream with one hand and squeeze pump with other. Stand erect.

HOW TO USE ALASKAN

FREE Valuable packet of photos suitable for wall mounting. Also our General's new calendar featuring Norman Rockwell's illustration of the Great Chicago Fire. Write Detroit office.

Let General Protectionists prescribe the right extinguisher for your every fire hazard.

GENERAL

IT'S DEPENDABLE

THE GENERAL DETROIT CORP.

2270 E. JEFFERSON AVE., DETROIT 7, MICH.

Distributors in principal cities

CHICAGO DALLAS NEW YORK

West Coast Affiliate: The General Pacific Corp.

Seattle • LOS ANGELES • San Francisco